S. F. VIELHABER.

BELLY PIPE NOZZLES FOR BLAST FURNACES.

No. 182,621. Patented Sept. 26, 1876.

Fig: 1.

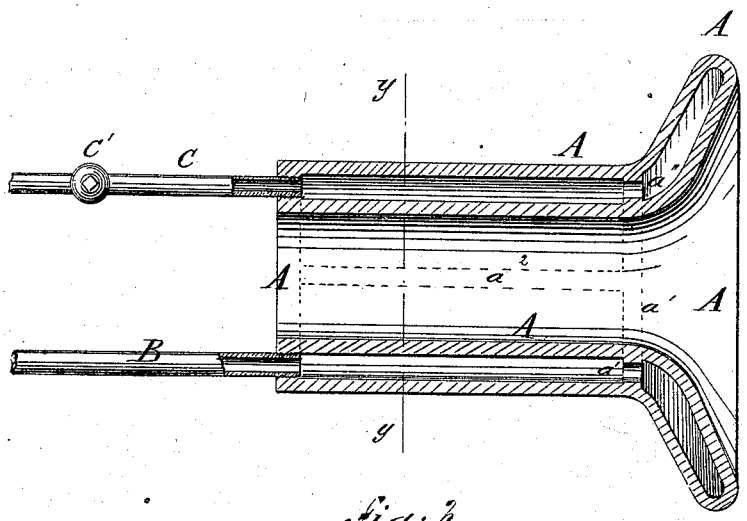
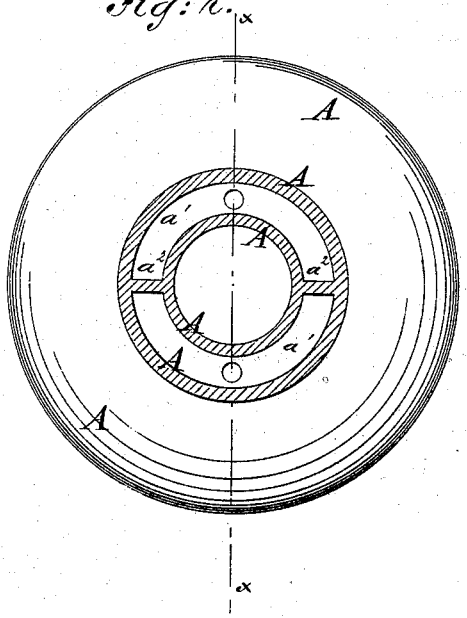


Fig: 2.



WITNESSES:

Chas. Nida.

John Goodhals

INVENTOR:

S. F. Vielhaber

BY Munn & Co

ATTORNEYS.

UNITED STATES PATENT OFFICE.

SIGISMUND F. VIELHABER, OF CONSHOHOCKEN, PENNSYLVANIA.

IMPROVEMENT IN BELLY-PIPE NOZZLES FOR BLAST-FURNACES.

Specification forming part of Letters Patent No. **182,621**, dated September 26, 1876; application filed September 2, 1876.

To all whom it may concern:

Be it known that I, SIGISMUND FRIEDERICH VIELHABER, of Conshohocken, county of Montgomery and State of Pennsylvania, have invented a new and useful Improvement in Belly-Pipe Nozzles for Blast-Furnaces, of which the following is a specification:

In the accompanying drawing, Figure 1 is a longitudinal section of my improved nozzle, taken through the line X X, Fig. 2; and Fig. 2 is a cross-section of the same, taken through the line Y Y, Fig. 1.

Similar letters of reference indicate corresponding parts.

The object of this invention is to furnish an improved belly or blast pipe nozzle for blast-furnaces, which shall be so constructed as to introduce the blast into the furnace in such a way as to increase the quantity as well as the quality of pig-iron in the first stages of manufacture, while, at the same time, preventing the nozzle from being burned off readily by the intense heat to which it is exposed.

The invention consists in the double-walled nozzle made with a flaring inner end, and provided with a ring-partition at the base of its flaring inner end, having two holes formed through it, corresponding with the holes in its outer end, in which the inlet and outlet pipes are inserted, and provided with two longitudinal partitions in its straight part, midway between said inlet and outlet pipes, as hereinafter fully described.

In the drawing, A is the nozzle, the inner end of which is made flaring, as shown in Fig. 1. The nozzle A is made hollow, and, at its outer end, which is connected with the blast-pipe, it is provided with an inlet-pipe, B, and an outlet-pipe, C, the outlet-pipe being provided with a stop-cock, c', to enable the flow of the water to be regulated. The nozzle A at the base of the flare of its inner end is provided with a ring-partition, a^1, through which, directly opposite the inlet and outlet pipes B C, are formed holes, through which the water passes into and out of the space in the flaring end of the nozzle. The ring-space in the outer or straight part of the nozzle A, midway between the pipes B C, is divided into two equal parts by two longitudinal partitions, a^2, to insure a circulation of the water through the space in the flaring end of the nozzle. The flaring inner end of the nozzle causes the blast to enter the lower part of the furnace in every direction, so that there will be no dead places, which causes the iron to be more thoroughly and quickly melted, and prevents it from being chilled and forming "salamanders" in said lower part of the furnace.

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

The double-walled nozzle A, made with a flaring inner end, and provided with a ring-partition, a^1, at the base of its said flaring inner end, having two holes formed through it corresponding with the holes in its outer end, in which the inlet and outlet pipes B C are inserted, and provided with two longitudinal partitions, a^2, in its straight part, midway between said inlet and outlet pipes, substantially as herein shown and described.

SIGISMUND FRIEDERICH VIELHABER.

Witnesses:

WM. HAYWOOD,

FREDK. LIGHT.