

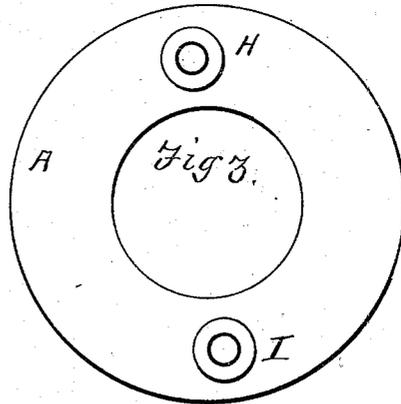
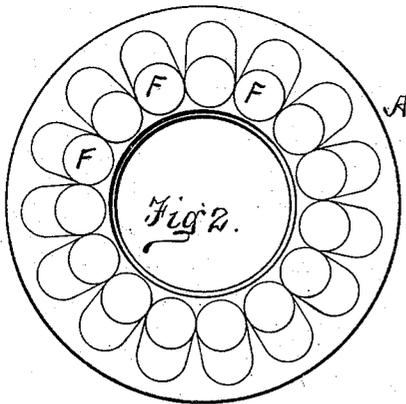
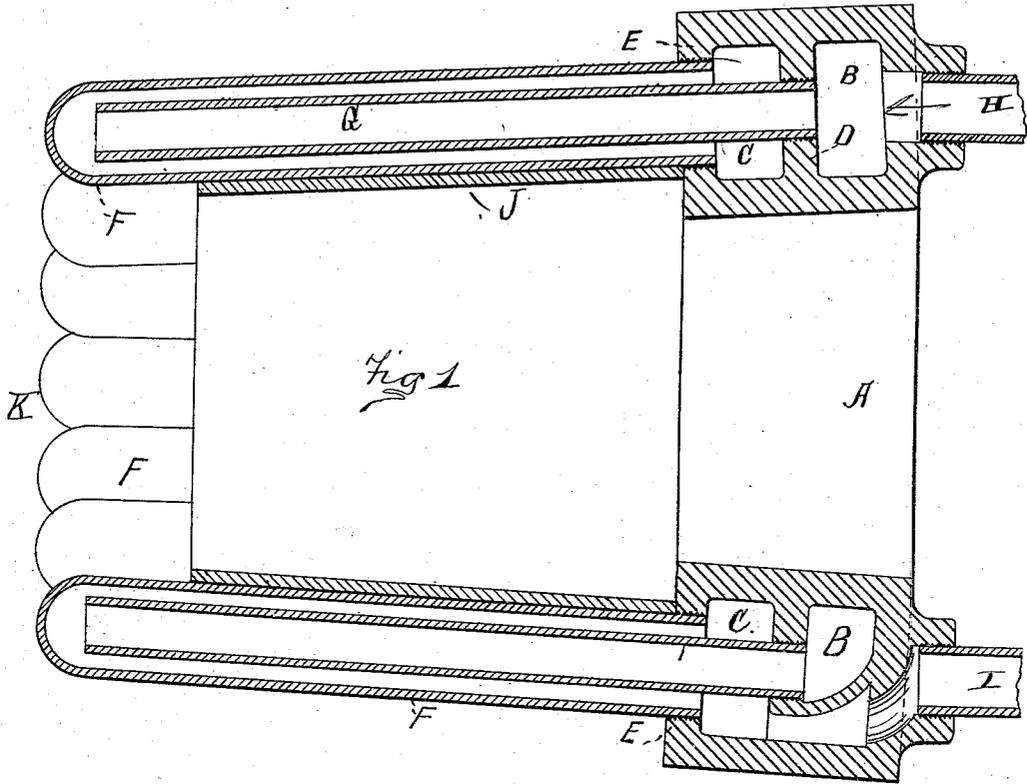
(No Model.)

F. W. GORDON.

TUYERE.

No. 257,571.

Patented May 9, 1882.



WITNESSES:
John Lorenz
John Robbins

Fred W. Gordon INVENTOR
by *James M. See*

ATTORNEY

UNITED STATES PATENT OFFICE.

FRED. W. GORDON, OF PITTSBURG, PENNSYLVANIA.

TUYERE.

SPECIFICATION forming part of Letters Patent No. 257,571, dated May 9, 1882.

Application filed February 23, 1882. (No model.)

To all whom it may concern:

Be it known that I, FRED. W. GORDON, of Pittsburg, Allegheny county, Pennsylvania, have invented certain new and useful Improvements in Tuyeres for Furnaces, of which the following is a specification, reference being had to the accompanying drawings, in which—

Figure 1 is a vertical section of the tuyere; Fig. 2, a face view, and Fig. 3 a rear view, of the same.

This invention relates to a water-cooled tuyere, and has for its object to perfect the cooling of the tuyere and to permit the ready renewal of such parts of the tuyere as first become damaged by heat.

In the drawings, A is an annular hollow casting, having two annular passages, C and B, separated by the partition D. A water-inlet pipe, H, connects with the rear passage, B, and a water-outlet pipe, I, connects with the front passage, C. Into the front E of the casting pipes F are screwed as close together as proper strength between pipes will permit. The front ends, K, of the pipes F are closed by welding in a suitable die. These pipes converge so that their front ends, K, lie close together and in contact, as shown in Fig. 2. Into the par-

tion D smaller tubes G are screwed. These tubes G lie inside the tubes F and reach nearly to the closed front end of them, as shown. An inner shell, J, cast with the casting A or made separate, serves to close the tapering spaces between the pipes F, and thus direct the blast straight through the tuyere. Cold water, entering at H to passage B, is forced through all the pipes G to the extreme front end of all the pipes F, whence it passes, through the pipes F, outside of pipes G, into passage C, and out at I.

Any individual pipe F becoming destroyed or damaged can be renewed without disturbing any other portion of the tuyere.

I claim as my invention—

1. The casting A, having two annular passages, B and C, each with an external connection, the closed pipes F, and the internal pipes, G, combined substantially as set forth.

2. The casting A, convergent pipes F, internal pipes, G, and inner shell, J, combined substantially as set forth.

FRED. W. GORDON.

Witnesses:

J. M. ROURKE,
J. P. WITHEROW.