

T. GILSON.

Improvement in Tuyeres.

No. 130,633.

Patented Aug 20, 1872.

Fig. 1.

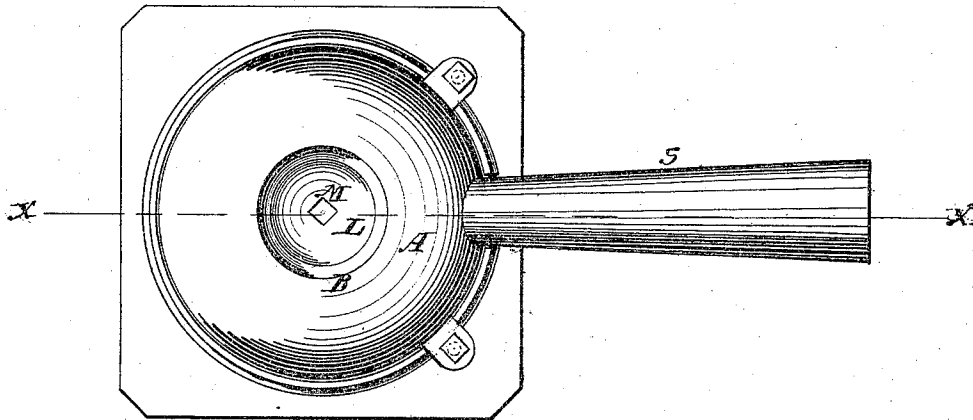


Fig. 2.

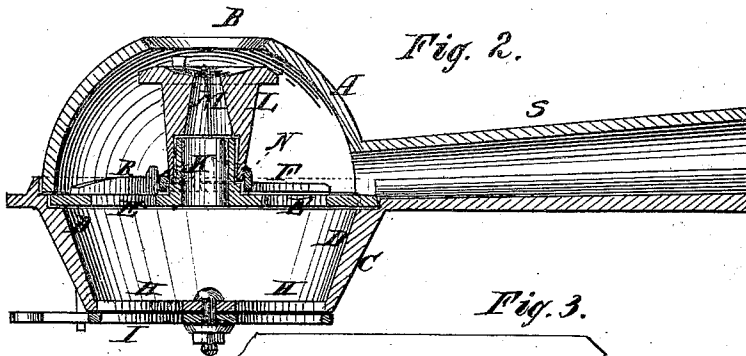
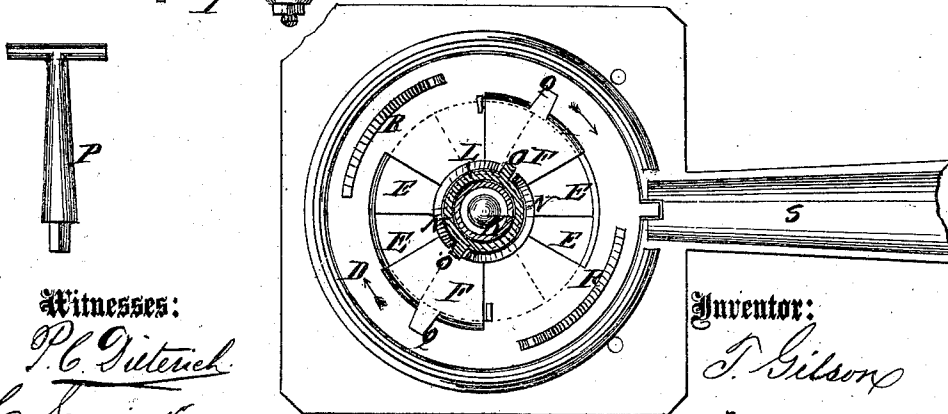


Fig. 3.



Witnesses:

P. C. Gistenech
C. S. Gistenech

Inventor:

T. Gilson

Attorneys.

UNITED STATES PATENT OFFICE.

THEODOR GILSON, OF PORT WASHINGTON, WISCONSIN.

IMPROVEMENT IN TUYERES.

Specification forming part of Letters Patent No. **130,633**, dated August 20, 1872.

Specification describing a new and Improved Tuyere, invented by THEODOR GILSON, of Port Washington, in the county of Ozaukee and State of Wisconsin.

My invention consists of a novel arrangement of the devices comprising a tuyere, with a hollow oval-headed plug below a large circular opening in the cap, whereby said devices may be adjusted to cause the air to escape both around the oval head in an annular jet, and through the hole of the plug in a central jet, or through either alone, and to vary the quantity discharged through either at pleasure, all as will be hereinafter described.

Figure 1 is a plan view of my improved tuyere. Fig. 2 is a transverse sectional elevation taken on the line *xx* of Fig. 1. Fig. 3 is a horizontal section, and Fig. 4 is a side elevation of a key for turning the plug.

Similar letters of reference indicate corresponding parts.

A represents an ordinary inverted cup-shaped cap, with a large central air-hole, B, in the top, such as is commonly used in tuyeres; and C is another cup arranged under A, and connected with it edge to edge. These two cups are divided in the plane in which they are joined together by a diaphragm, D, having air-passages E, and above it is a valve or register, F, for closing and opening said passages. The bottom of cup C has also openings H, with a valve or register, I, for controlling them. The plate D has also a vertical hollow extension, K, rising from its upper surface, on which is fitted the hollow oval-headed plug L for controlling the escape of air from the cup A, through hole B, around the head of said plug; also for discharging a central jet through its hole M, from the cup C, below plate D. This plug fits at its lower end within a short vertical flange, N, of valve F, and has two lateral projections, O, extending into notches in said flange so as to rest on it when the valve rises; also so as to turn said valve for opening and closing it, the plug being turned by a key, P, introduced through hole B into the top of hole M. This plate or valve F turns around the hollow projection K of plate D, laying flat upon said plate when closing the opening E; but it has two projections, Q, from its periphery, at opposite sides,

which ride up inclines R when the plate is turned to the right, after having closed the passage E, to open them again, and at the same time diminish or close altogether the annular opening around the head of the plug by lifting the latter up toward or against the under side of cup A.

The air enters cup A through the nozzle S, and when the disk F is turned far enough to the left to wholly uncover passages E, flows up over and around plug L, and down through said passages E and up through the center hole in the plug unobstructedly, giving a full measure of air and making the largest fire. Then, by turning valve F to the right by key P, the flow through the center hole may be diminished, as required, or wholly cut off, the flow over the top of the plug being unobstructed; but after wholly shutting off the flow through the plug, by turning still further to the right and causing the valve F to rise on the inclines R, the flow through the plug will again be set up, and the flow over the plug will be diminished by the rising of the plug, and finally cut off entirely, at which time the passage through the plug will be fully opened again. This makes the smallest fire, which, it will be seen, can be varied by gradual stages to suit any required condition between the two extremes, which differ by a very considerable range.

When the passages E are closed by the valve F the valve I below may be opened, without any loss of wind, to let the ashes fall out; also to let the fine dust drop down through the hole of the plug.

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

1. The combination, with cups A and C, of the dividing-plate D with openings E and inclines R, the valve or register plate F, and hollow plug L, the said cup A having the opening B at the top, all substantially as specified.

2. In combination with the above, the register or valve I and passages in the bottom of cup C, substantially as specified.

THEODOR GILSON.

Witnesses:

JOHN GENGLER,
A. HEIDKAMP.