(No Model.)

J. CUMMING.

TUYERE.

No. 386,528. Patented July 24, 1888.

FIG. 3.

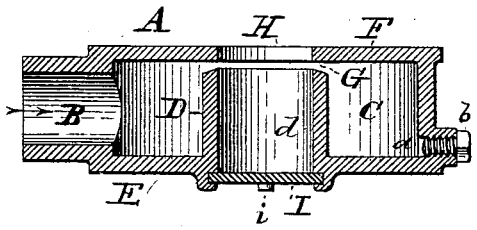


FIG. 4.

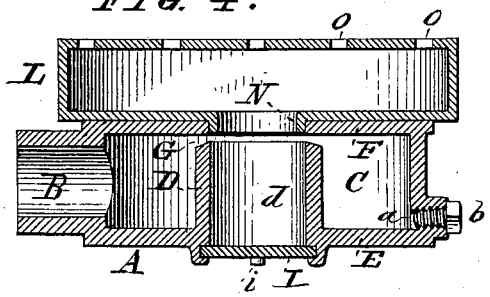


FIG. 1.

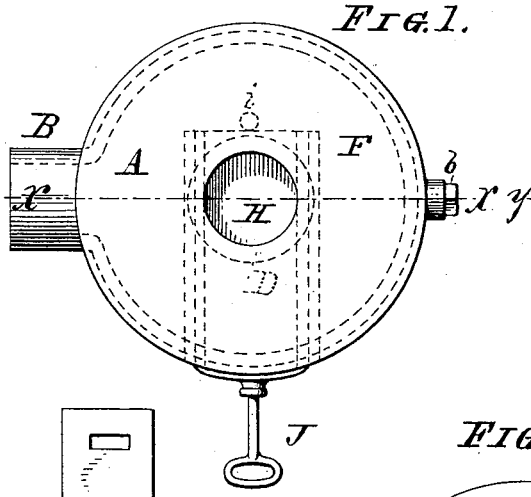


FIG. 2.

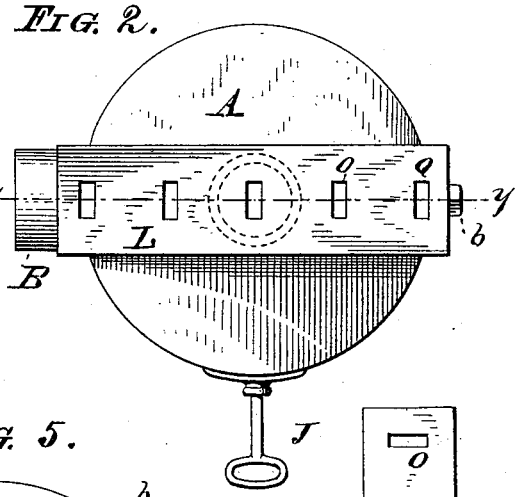


FIG. 5.

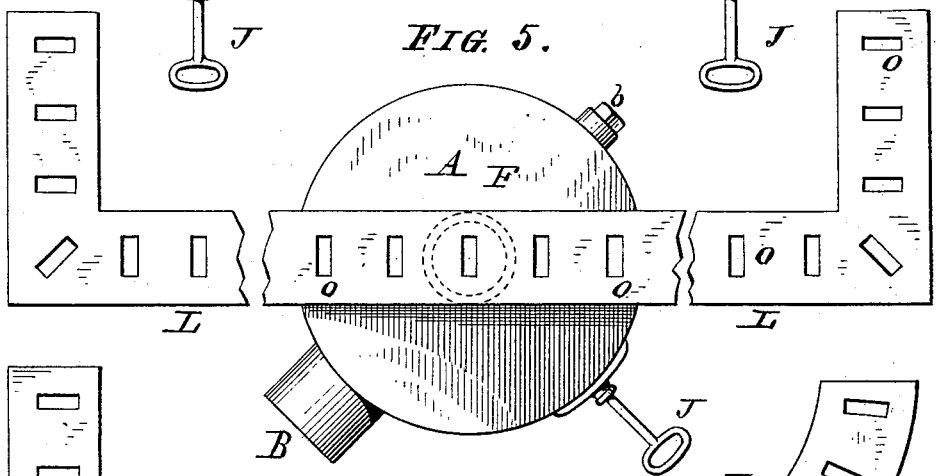


FIG. 6.

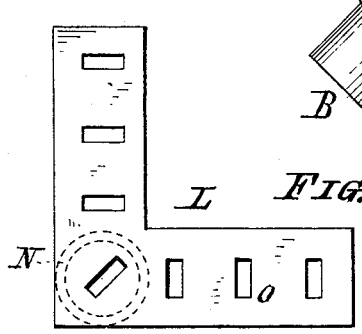
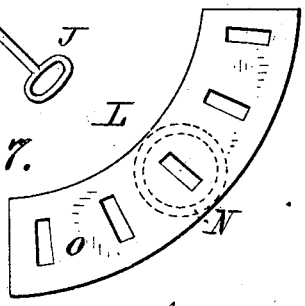


FIG. 7.



Witnesses,
Wm. O. Stark.
Centie S. Stark.

Inventor,
James Cumming.
by Michael J. Stark, attorney.

UNITED STATES PATENT OFFICE.

JAMES CUMMING, OF BUFFALO, NEW YORK.

TUYERE.

SPECIFICATION forming part of Letters Patent No. 336,528, dated July 24, 1888.

Application filed January 24, 1888. Serial No. 261,720. (No model.)

To all whom it may concern:

Be it known that I, JAMES CUMMING, of Buffalo, in the county of Erie and State of New York, have invented certain new and useful Improvements on Blacksmiths' Tuyeres; and I do hereby declare that the following description of my said invention, taken in connection with the accompanying sheet of drawings, forms a full, clear, and exact specification, which will enable others skilled in the art to which it appertains to make and use the same.

My present invention has general reference to blacksmiths' tuyeres; and it consists, essentially, in the novel and peculiar combination of parts and details of construction, as hereinafter first fully set forth and described, and then pointed out in the claim.

In the drawings, Figure 1 is a plan of my improved tuyere. Fig. 2 is a similar view showing my improved blast-extensions in position. Fig. 3 is a transverse sectional elevation in line *x x* of Fig. 1. Fig. 4 is a similar view in line *y y* of Fig. 2. Figs. 5, 6, and 7 are plans showing various modifications of my improved tuyere and blast extensions.

Like parts are designated by corresponding letters of reference in all the figures.

The object of my present invention is the production of a very simple, convenient, efficient, and durable tuyere-iron for blacksmiths' fires. To obtain this result, I construct my tuyere-iron proper of an annular case, A, having on one side a branch or nozzle, B, through which an air-blast enters the interior or air chamber, C, of said case A. In the interior of this chamber is a tube, D, formed, preferably, in one piece with the bottom E, said tube extending upward to within a short distance of the top F of the case A, so as to produce an annular passage, G, Figs. 3 and 4, through which the air-blast entering the chamber C escapes into the blast-opening H, formed in the top F of the case A, as shown in Figs. 1 and 3, and thence into a blacksmith's fire when built upon the tuyere.

On the bottom of the case A are formed two grooves, in which a slide operates so as to close the passage *d* in the tube D on the bottom, a handle, J, being provided for to operate the said slide I in a manner readily comprehended, and a stop, *i*, Figs. 1, 3, and 4, being formed on the bottom E to limit the movement of said slide.

Opposite the nozzle B, or in any other convenient place in the chamber C, I form an exit-opening, *a*, closed by a suitable plug, *b*, for the purpose hereinafter to be referred to.

The tuyere-iron thus far described, except the slide I and plug *b*, is formed entire—*i. e.*, in one piece of casting—in gray or malleable iron or steel, thus combining strength with cheapness, it being a matter of fact that this tuyere can be produced for less money than any other tuyere-iron with which I am acquainted. It is capable of being used successfully in any blacksmith's forge, and will produce a very strong fire, while by pulling the slide I an opening is made through which the cinders accumulating on the top of the tuyere can be readily discharged down into the usual pit of the forge. By withdrawing the plug *b* an escape-opening is afforded, through which ashes, dust, &c., accumulating in the air-chamber C can be discharged.

In many cases it is desirable to build peculiarly-shaped fires to adapt them to particular forgings on hand. To provide for such cases, I provide my tuyere with a number of detached conduits—such as shown in Figs. 2, 4, 5, 6, and 7—consisting of tubes L, having an angular transverse section, and on their bottom side an annular rim, N, fitting the opening H in the top of the tuyere, and provided in their top surface with a series of slots or escape-openings, O, as clearly shown in the drawings. These conduits have different forms, being either angular, as shown in Figs. 5 and 6; straight, as shown in Fig. 2; circular, as indicated by the shading of the same in Fig. 4, or curved, as illustrated in Fig. 7, adapted to the different requirements of a job on hand. These conduits can be instantly inserted into the tuyere and a peculiarly-shaped fire started that will answer the purpose desired.

Having thus fully described my invention, I claim as new and desire to secure to me by Letters Patent of the United States—

The annular casing A, having the nozzle B

and the upright tube D cast therewith, and having also a central opening, H, above said tube, in combination with an auxiliary conduit having a central opening, and a downwardly-extending flange, N, surrounding said opening and fitting into the said opening H, this auxiliary conduit being shaped to conform to the work required and provided with discharge-openings *o* in its top, substantially as set forth.

In testimony that I claim the foregoing as my invention I have hereto set my hand in the presence of two subscribing witnesses.

JAMES CUMMING.

Attest:
MINNIE HEIM,
WM. ASPDIN.