D. S. Loy,

Tuyere,

No. 48,963. Patented July 25, 1865.

Fig 3.

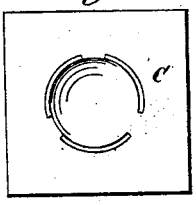


Fig. 1.

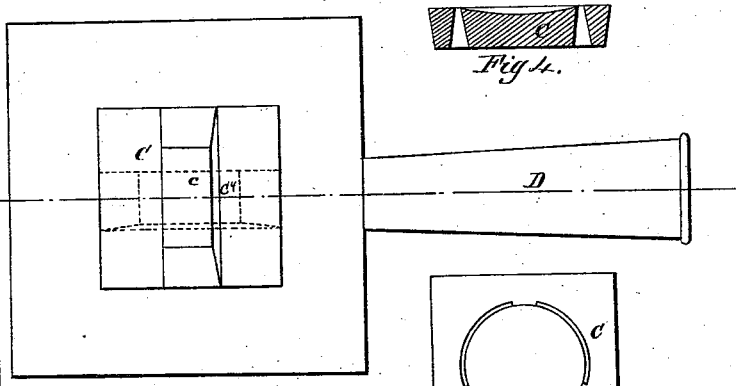


Fig 4.

Fig. 6.

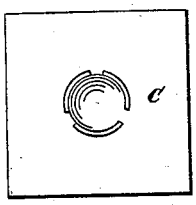
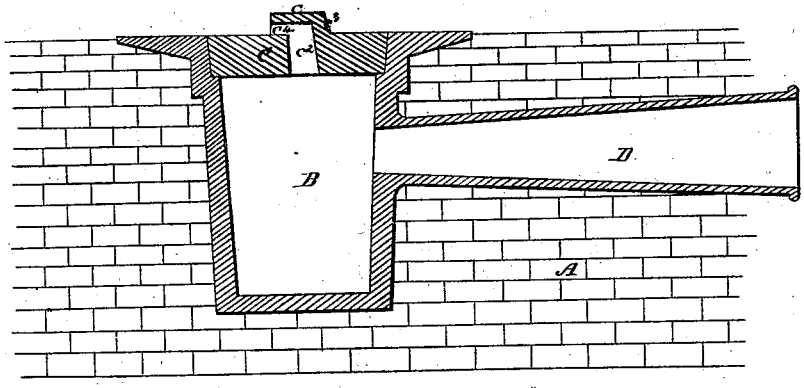


Fig 2.



Witnesses.

Charles D. Smith.
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UNITED STATES PATENT OFFICE.

DANIEL S. LOY, OF GRACEHAM, MARYLAND.

IMPROVED TUYERE.

Specification forming part of Letters Patent No. **48,963**, dated July 25, 1865.

To all whom it may concern:

Be it known that I, DANIEL S. LOY, of Graceham, in the county of Frederick and State of Maryland, have made new and useful Improvements in Tuyeres; and I do hereby declare the following to be a full, clear, and exact description of the nature, construction, and operation of the same, reference being had to the accompanying drawings, which are made part of this specification, and in which—

Figure 1 is a top view or plan. Fig. 2 is a vertical central section on the line *x x*, Fig. 1. Fig. 3 is a plan of the circular-disk blast-plate. Fig. 4 is a section of the circular-disk blast-plate. Figs. 5 and 6 are plans of circular-disk blast-plates of various apertures.

The same letters refer to corresponding parts in the different figures.

The object of my improvement is to obtain a blast of such a character or direction as may be required for the varying kinds of work.

To enable one skilled in the art to which my invention appertains to construct and use the same, I will proceed to describe it.

A may represent the brick-work of the blacksmith's forge, and B the well or ash-space under the blast-plate C.

D is the blast-pipe leading from the bellows. The blast-plate C has upon it a bridge, *c*, which spans the central slit, c^2, and being in contact with the blast-plate on one side, c^3, deflects the air and causes it to pass out at the long slit or orifice c^4. The blast-plate C is removable, and, being shown square, may be so placed as to deflect the air in either of the four directions which it is capable of assuming. The purpose subserved by this will be presently understood.

Figs. 3 and 4 represent circular-disk blast-plates, in which the air is passed in an even stream through a circular orifice. The square margin of the plate fits the same opening as is shown occupied by the plate in Figs. 1 and 2.

Figs. 5 and 6 represent circular-disk blast-plates with circular openings of various sizes. Of the various blast-plates shown, one at a time is to be used, covering the opening above the well B, and the proper one will be selected by the operator, according to the character of the work to be performed. The change is made in one case by shifting the blast-plate and changing the direction of the air which issues from the long slit c^4, and in the other case by the substitution of a blast-plate with a different-sized aperture. To speak first of the former case—namely, that shown in Figs. 1 and 2—it is frequently the case that the smith desires to give a certain direction to the heat of the fire, and the shape or size of the article may render it difficult of presentation except in one certain way. In this case, being aware of the necessities of his work, he will so place the blast-plate as to direct the heat in the most effective manner.

In steeling axes the smith may direct the blast upon the portion to be welded, the bridge at the same time affording a partial protection for the other portions of the ax. The long narrow heat is especially useful in making gun-barrels. Other instances might be cited, but these may suffice.

A mild even heat is obtained by the circular-disk blast-plate, which admits an equal amount of air at all points to pass to the fire. The size of the opening is adapted to the character of the work by placing such a one of the plates in position over the well as may be best adapted to the designated purpose. As an instance of the work adapted to this kind of opening I may mention brazing-in the bottom of a brass kettle. The shape of the circular opening, tapering equally on both sides, throws the blast directly upward, and not inwardly or outwardly, so that its full radial extension is utilized. The shape is also favorable to keeping clean, as any dust, cinder, or bead of metal which may be detained in the aperture may be removed with facility, and will, together with the ordinary débris which falls, be collected in a chamber, which is readily accessible for the purpose of cleaning.

The blast-plates are readily replaced as they may become worn.

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

The blast-plate C, having a deflected slit-opening, and capable, by change of position, of directing the blast in the direction required, as described and represented.

The above specification of my improvement in tuyeres signed this 1st day of May, 1865.

DANIEL S. LOY.

Witnesses:

ALEXR. A. C. KLAUCKE,

CHARLES D. SMITH.