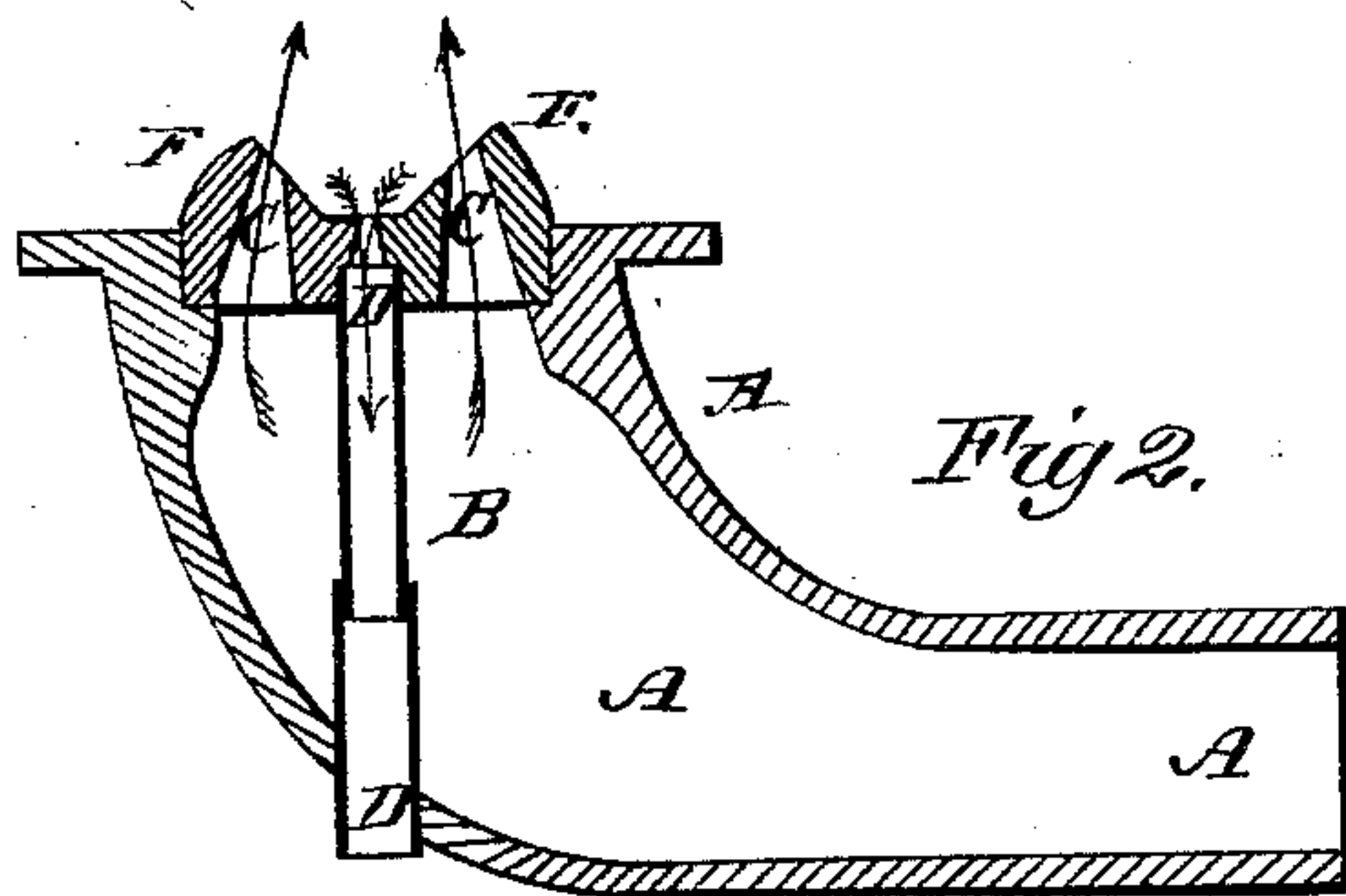
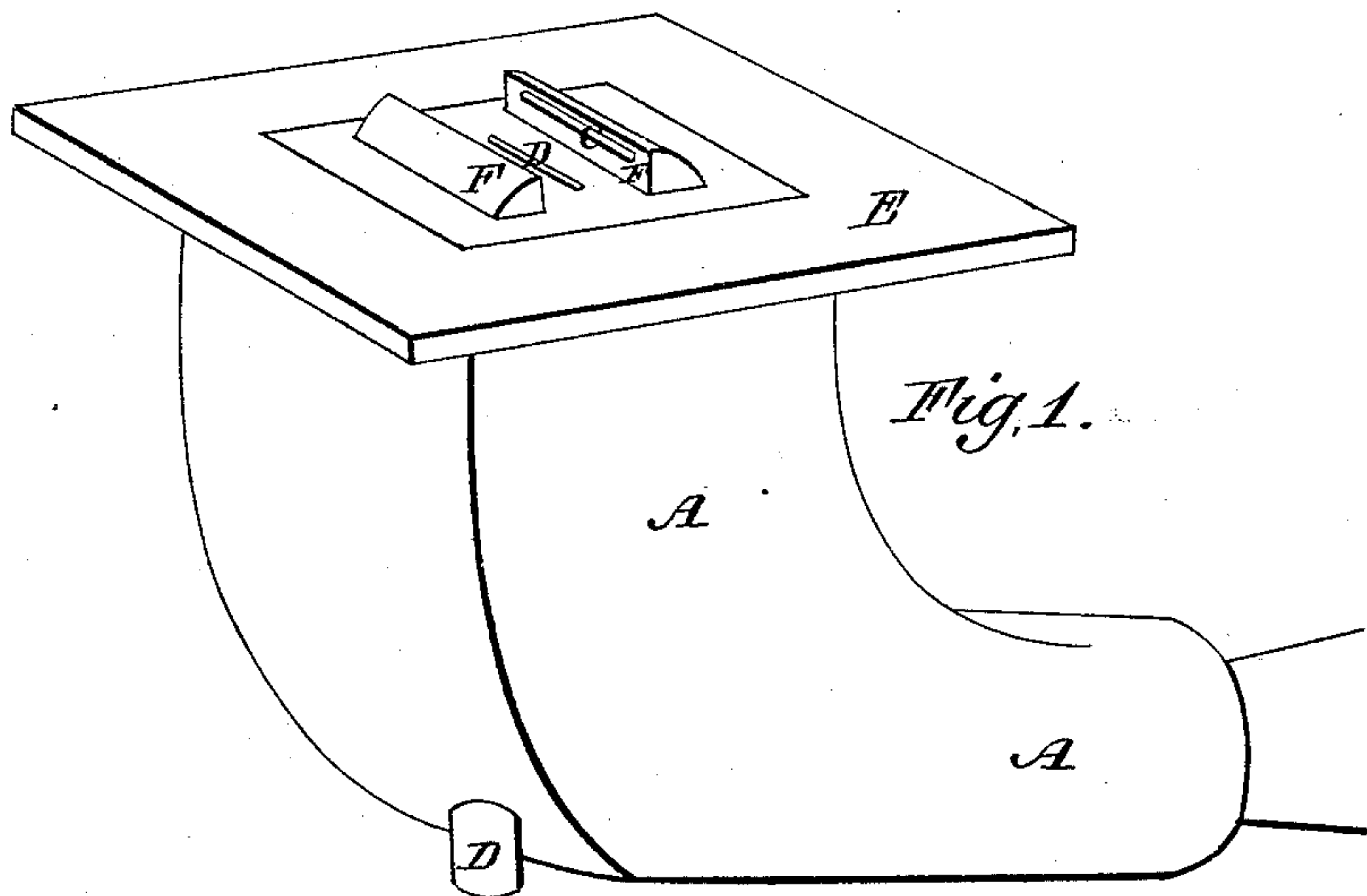


W. H. Myers,

Tuyere,

No. 78,471.

Patented June 2, 1868.



Witnesses.

J. C. Lyons.
R. S. Turner

Inventor.

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By his atty
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WILLIAM H. MYERS, OF BALTIMORE, MARYLAND, ASSIGNOR TO SYLVESTER MATTHIAS, OF SAME PLACE.

Letters Patent No. 78,471, dated June 2, 1868.

IMPROVEMENT IN TUYERES.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, WILLIAM H. MYERS, of Baltimore, in the county of Baltimore, and State of Maryland, have invented a new and useful Improvement in Tuyeres; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, in which—

Figure 1 is a perspective view of my tuyere detached from the forge.

Figure 2 is a vertical longitudinal section of the same in position.

My invention relates to that class of tuyeres which have an air-chamber between the nozzle of the bellows and the orifice through which the air passes into the fire, and it consists in providing the bed, upon which the centre of the fire rests, with an open escape-pipe, through which dust and fine ashes may escape from the bottom of the fire while the bellows is in operation, and through which a direct upward draught may pass to the fire when the bellows has ceased to operate.

That others may understand the nature and construction of my invention, I will fully describe it.

A is the cast-iron shell, forming the air-chamber of my tuyere. This air-chamber may be of any desired size, though I know of no particular advantage to be derived from increasing its dimensions beyond what is necessary.

The air-chamber B has a neck or orifice at one side, for the admission of the nozzle of the bellows, and at the top of the shell A is the flange E, by which the said shell is sustained in its position in the bottom of the forge.

Across the top of the plate or flange E are the two ridges, F, with a small flat space between them, and the two slots C C, penetrating from their inner slopes to the air-chamber B. These slots are the outlets for the air from the bellows. They are enlarged from their outer ends inward, and are inclined towards each other, as shown, so that currents of air, passing outward through them, would meet at a distance of four or five inches. These orifices C C may be larger or smaller, according to the quantity or size of the fire to be made, and, in practice, the part containing the ridges, F F, I prefer to make separate from the plate E, and inserted therein, as shown in fig. 2, so that they can be made in sets with orifices of different sizes, and may be interchanged whenever it is desired.

It has been found that with a tuyere constructed as above, and with no additional feature, the accumulation of dust and ashes at the point in the immediate vicinity of the blast-holes would, in a little time, become a serious inconvenience.

By experiment I have discovered that, by inserting an open pipe similar to that shown at D, I can almost, if not perfectly, obviate and correct all of these difficulties. This pipe is flattened at its upper end, so as to present the form of a narrow slot, extending between the ridges F F, and parallel with them, and nearly or quite as long as the slots C C. From thence it descends through the air-chamber B, and opens beneath the forge in some open space left for that purpose.

When I construct the part of the plate which contains the ridges and orifices separate from the remainder, as above described, I also make the pipe D in two parts, so that the joint at the upper end of said pipe may be made permanent and tight.

The operation of this pipe will be readily understood.

While the bellows is in operation, the currents of air, passing outward through the orifices C C, impinge against the pieces of fuel lying above them, and there will be a slight reaction, sufficient to cause a slight flow of air downward through the pipe D, and this flow will be sufficient to remove dust and fine ashes, which will always accumulate at that point. When fresh fuel is mixed with that which is burning, there will also be an escape of gas through the same duct, and the gas which so escapes is precisely the portion which would be most likely to injure a piece of iron placed in the fire to heat, because the iron to be heated is placed near the bottom of the fire, and gas generated above it would pass off without doing injury. When the bellows ceases to operate,

then there is an upward current immediately established through the pipe D, because air can gain access to the fire more readily through said pipe than from above, through the caked fuel.

By this arrangement I secure a better heat, a more compact fire, a cleaner fire, and less inconvenience from dust and gas than can be attained by the use of any other tuyere with which I am acquainted.

It is evident that the advantages of my open escape-pipe D may be obtained without adopting the whole of the details of construction which I have shown and described, and hence I should consider any escape-way having one end in communication with the fire, substantially in the manner described, and capable of conveying away the dust and ashes, while the bellows continues to operate, as above set forth, to embrace the principles of my invention.

Having described my invention, what I claim as new, is—

An escape-pipe D, or its equivalent, independent of the duct which conveys the blast to the fire, descending from the centre of the tuyere, to convey away ashes, dust, &c., from the bottom of the fire, and to admit a direct draught when the bellows is not in operation, substantially as set forth.

A tuyere, constructed with the air-chamber B, outlets C C, and the escape-pipe D, substantially as described.

WM. H. MYERS.

Witnesses:

R. D. O. SMITH,
S. MATHIAS.