

A. F. Du Faur,

Exhaust Nozzle.

No. 107,603.

Patented Sept. 20, 1870.

Fig. 1.

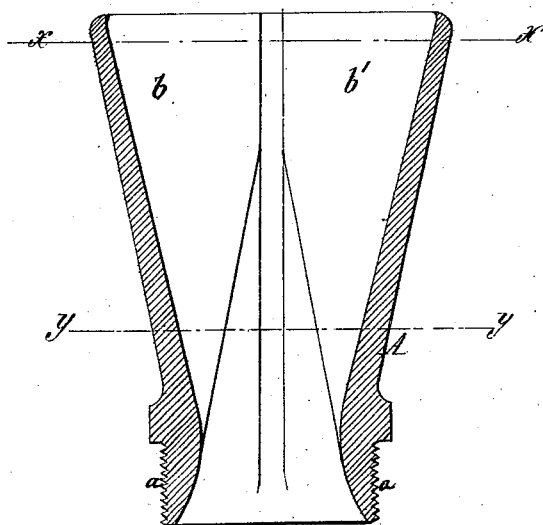


Fig. 2.

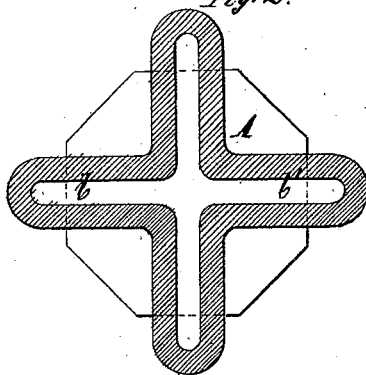
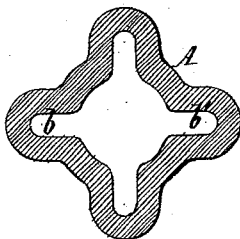


Fig. 3.



Witnesses.

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Inventor.

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his attys

United States Patent Office.

A. FABER DU FAUR, OF NEW YORK, N. Y.

Letters Patent No. 107,603, dated September 20, 1870.

IMPROVEMENT IN EXHAUST-NOZZLES.

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, A. FABER DU FAUR, of the city, county, and State of New York, have invented a new and improved Vacuum-Nozzle; and I do hereby declare the following to a full, clear, and exact description thereof, which will enable those skilled in the art to make and use the same, reference being had to the accompanying drawing forming part of this specification, in which drawing—

Figure 1 represents a vertical central section of this invention.

Figure 2 is a transverse section of the same, taken in the plane indicated by the line *x x*, fig. 1.

Figure 3 is a similar section, the line *y y*, fig. 1, indicating the plane of section.

Similar letters indicate corresponding parts.

This invention relates to a nozzle of that class which is used for the purpose of producing a vacuum in a furnace, cupola, converter, or other apparatus of a similar nature, or in the ascension-pipe of a pump, or in any apparatus where the air is to be exhausted or rarefied.

The improvement consists in making the nozzle with a gradually-increasing cross-section from its narrowest point toward the discharging end, the orifice of the nozzle presenting two or more flat branches, in such a manner that the jet of steam, while passing through the nozzle, is allowed to expand, and brought in that form which presents the greatest possible surface of contact with the air, as compared with the volume of steam which discharges from the nozzle, and, thereby, the useful effect of the nozzle is materially increased.

In the drawing—

The letter A represents a nozzle, which is provided at its receiving end with a screw-thread, *a*, so that it can be conveniently secured to a pipe connecting with a suitable steam-generator.

Said receiving end is bell-mouthed and circular, but

the area of the transverse section of the nozzle changes gradually into a cross, and it increases toward the discharging end, as shown in the drawing, so that the transverse section of the nozzle, near its discharging end, is such, as shown in fig. 2.

By these means the jet of steam discharging from the nozzle presents a very large surface of contact with the surrounding air, as compared with the volume of said jet, and the effect of the nozzle is greatly improved.

It must be remarked that this object can, also, be obtained, but less perfect, by giving to the discharge opening the shape of a simple flat channel, or, in other words, by making the same only with two branches, *b b'*, instead of with four, as shown in the drawing, or the number of these branches may be three or five, or any desired number, although my experiments show that a nozzle with four branches gives the best effect.

If desired this nozzle may be used with a core in the usual manner for regulating the area of the receiving opening, this opening being left round for this purpose.

What I claim as new, and desire to secure by Letters Patent, is—

1. A steam-nozzle, the discharging end of which presents two or more flat branches, *b b'*, substantially as shown and described.

2. A steam-nozzle, having a circular receiving end, and a discharging end, with two or more flat branches, *b b'*, and the area of which gradually increases from its narrowest part toward the discharging end, substantially as set forth.

A. FABER DU FAUR.

Witnesses:

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