

(No Model.)

L. G. HEYBROCK.
STEAM TUYERE.

No. 270,063.

Patented Jan. 2, 1883.

Fig. 1.

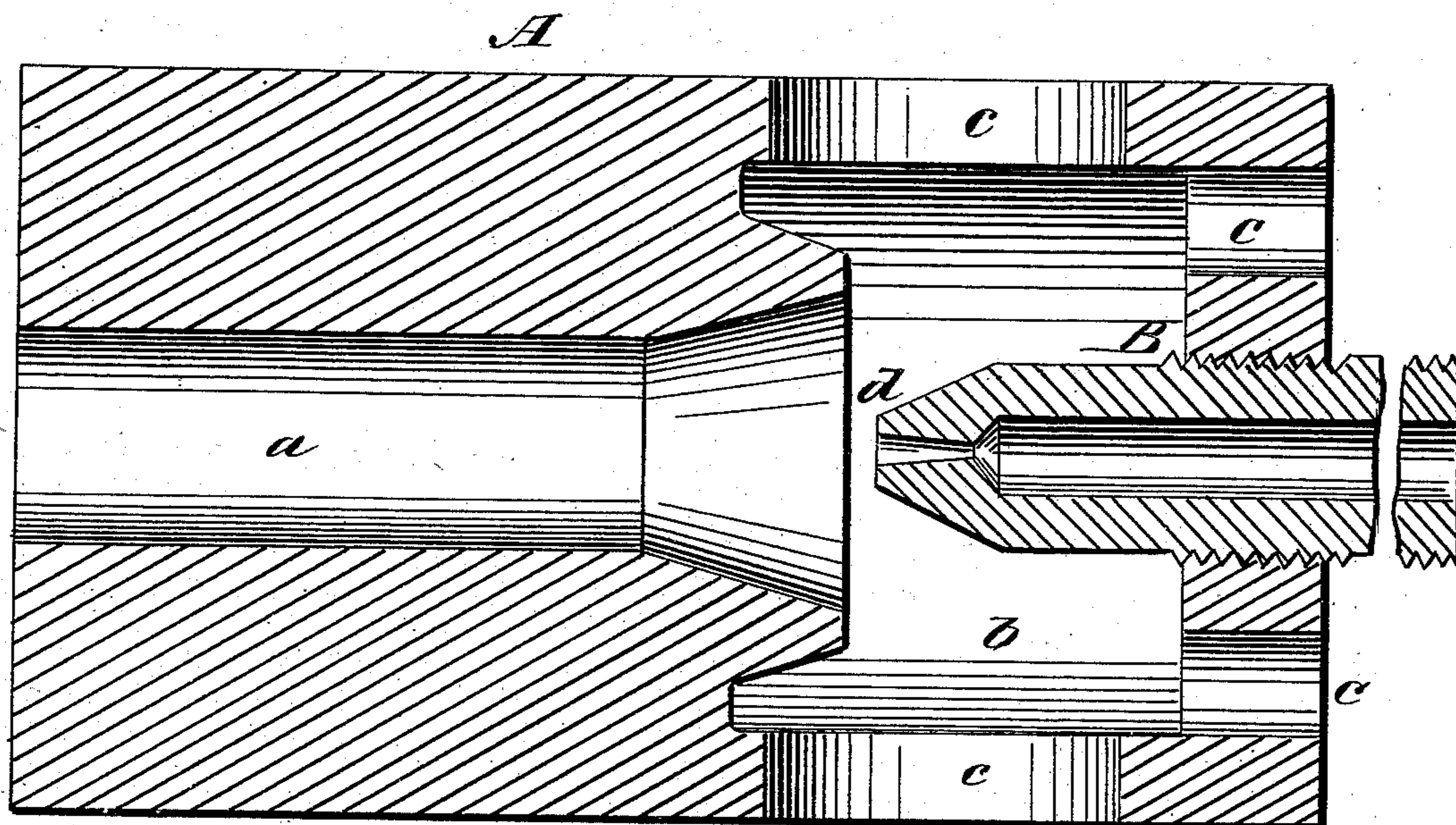
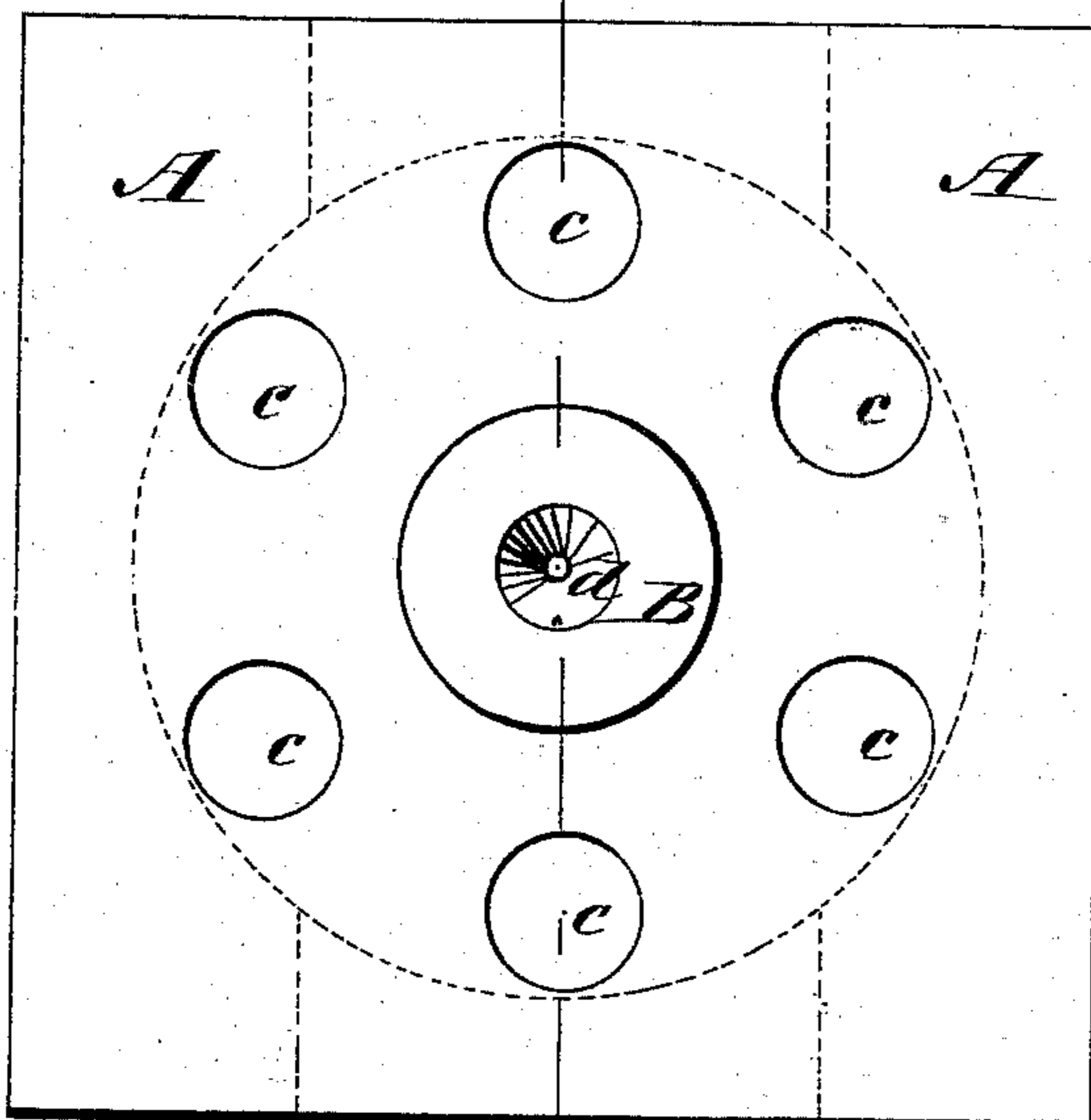


Fig. 2.



WITNESSES:

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LEWIS G. HEYBROCK, OF OMAHA, NEBRASKA.

STEAM-TUYERE.

SPECIFICATION forming part of Letters Patent No. 270,063, dated January 2, 1883.

Application filed August 4, 1882. (No model.)

To all whom it may concern:

Be it known that I, LEWIS G. HEYBROCK, of Omaha, in the county of Douglas and State of Nebraska, have invented a new and Improved Steam-Tuyere, of which the following is a full, clear, and exact description.

My invention relates to a tuyere operated by a steam-jet, for use with smelting and other furnaces, also with boiler-furnaces, for promoting combustion, as hereinafter described and claimed.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in both the figures.

Figure 1 is a longitudinal section of my improved tuyere. Fig. 2 is an end view of the same.

A is a casting, which should be made heavy enough to withstand the heat, and is formed with a central passage, *a*, from a chamber, *b*, at the rear end. In the sides and end of the chamber *b* are openings *c* for the inlet of air.

B is the steam-nozzle, entering at the rear end of the casting A, and projecting therein to near the end of the passage *a*. The outlet *d* of the nozzle at its forward end is flared, as shown, in order to spread the jet of steam. A pipe is to be connected to the outer end of the nozzle B for supplying steam from a suitable generator. The tuyere, when used on a steam-boiler, is to be inserted in the side of the fire-box above the grate-bars, and high enough so

that the jet of steam and air can strike a short distance above the coal-bed in a direction parallel with the bridge-wall.

The operation of the tuyere is to inject a mixture of steam and air into the fire, thereby causing more complete combustion, and more intense heat. When used with a forge the tuyere is placed in the same manner as an ordinary tuyere. In smelting-furnaces or any furnace intended for heating, smelting, or refining metals the tuyere is to be placed so that the jet shall strike the flame at a point where the greatest heat is required.

I am aware that it is old to produce a blast in steam-blowers and tuyeres for furnaces by a jet of steam and air; also, to make the steam-nozzle relatively adjustable with respect to the air-opening, so as to regulate the rapidity of combustion in the fire; but

What I do claim as new and of my invention is—

1. A tuyere-casting, A, formed with the central passage, *a*, the chamber *b*, the openings *c*, and an internal central thread at the rear for receiving a nozzle, as described.

2. In a tuyere, the steam-nozzle B, having an outlet, *d*, flared outwardly from the main passage, whereby the jet of steam may be spread, as described.

LEWIS G. HEYBROCK.

Witnesses:

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