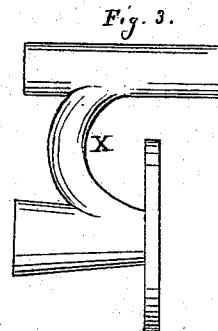
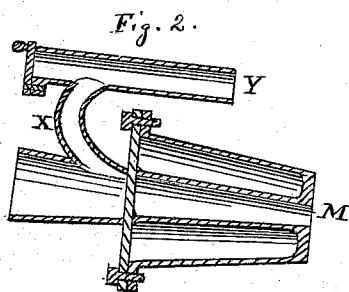
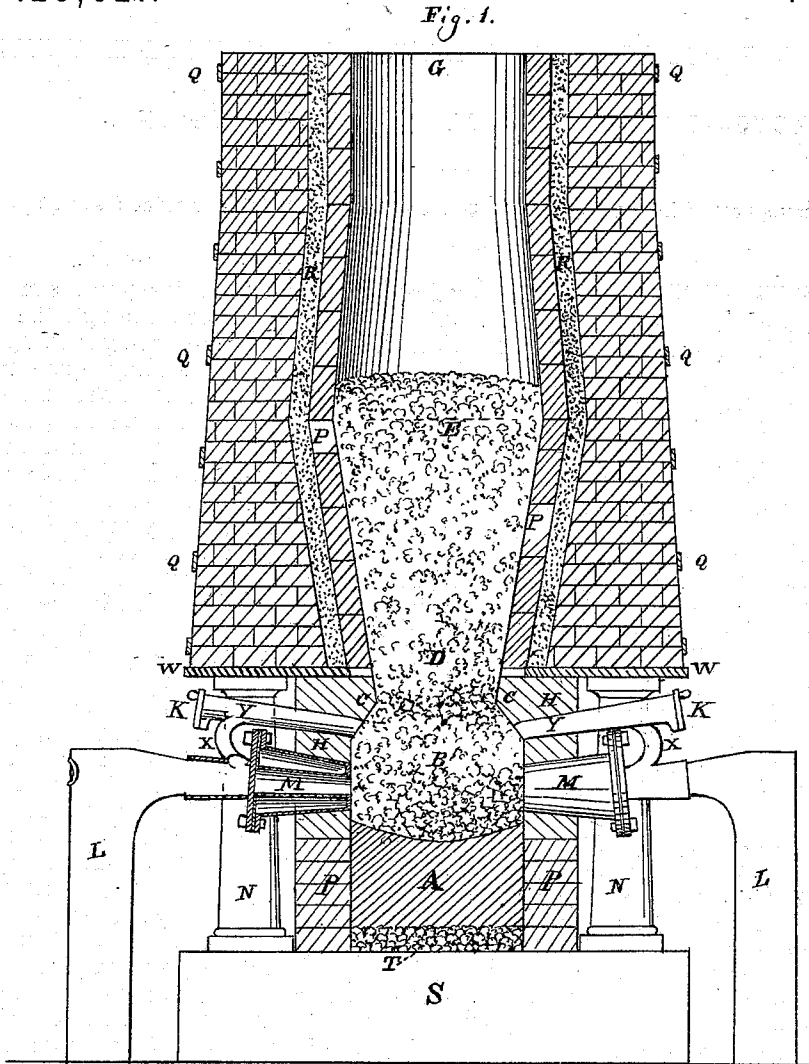


T. L. R. SCHEUNER.

Improvement in Furnaces for Smelting Ores.

No. 125,621.

Patented April 9, 1872.



Witnesses.

Geo. H. Howard.

H. A. Daniels.

Theophilus L. R. Scheuner Inventor.
Chas. I. Whitman Atty

UNITED STATES PATENT OFFICE.

THEOPHILUS L. R. SCHEUNER, OF SALT LAKE CITY, UTAH TERRITORY.

IMPROVEMENT IN FURNACES FOR SMELTING ORES.

Specification forming part of Letters Patent No. 125,621, dated April 9, 1872; antedated April 3, 1872.

SPECIFICATION.

To all whom it may concern:

Be it known that I, THEOPHILUS L. R. SCHEUNER, of Salt Lake City, in the county of Salt Lake and in the Territory of Utah, have invented certain Improvements in Furnaces for Smelting Ores; and do hereby declare that the following description, taken in connection with the accompanying drawing hereinafter referred to, forms a full and exact specification of the same, wherein I have set forth the nature and principles of my said improvement, by which my invention may be distinguished from others of a similar class, together with such parts as I claim and desire to secure by Letters Patent.

My invention relates to furnaces made use of for the purpose of smelting ores; and the nature thereof consists in placing reflow-flues above the tuyeres, and in certain improvements in the details of construction of the furnace, hereinafter shown.

In the accompanying drawing, illustrating my invention and forming part of the specification thereof, Figure 1 is a transverse vertical section, and Figs. 2 and 3 illustrate the tuyere and reflow-pipe.

The construction, operation, and relative arrangement of the component parts of my invention are as follows:

The modes at present in use of extracting by exhaustion carbonic gases from the top and middle of the furnace-stack are not satisfactory, as the gases obtained from the top and middle of the furnace are very impure, being mixed in combination with acids and deleterious substances. It is the object of my invention to obviate this difficulty.

In the drawing, A designates the artificial hearth of the furnace; C, a circumferential angular projection, the office of which is to let down centrally the charge of ores, to create an accumulation of the generated carbonic gases for the purpose of causing the same to enter the reflow-flues, and preventing the flow of slag from running over the tuyeres. D represents the lower part of the boshes; E, the upper midway inverted boshes; G, the uppermost part of the stack-furnace known as the

"throat;" H, quarried fire-proof sand-stone with reflow-flues pierced through the same; N, cast-iron columns supporting the diaphragm W; L, main outside standing blast-pipe; P, fire-bricks lining the inside of the furnace; Q, Iron hoops or binders of the stack; R, filling of sand and ashes between lining and outside common masonry; S, foundation of the furnace; T, sole of the furnace with a layer of slag; U, common brick masonry stack; V, cast-iron diaphragm supporting the stack; B, laboratory of the furnace, having an outlet for slags and metal to pass out into a basin prepared for their reception; M, the tuyere, to a flange on which is bolted the siphon X and the cold-air entrance-tube Y, which are soldered or welded together, as shown. The longer limb of the siphon is provided with a cap, K, which is pivoted to the same in such a manner as to be opened and shut with facility, to show the strength of gases, and supplied with a window of isinglass, through which the operator may observe the condition of the laboratory. This invention constitutes a smelting-furnace, either stationary or portable. By the use of the siphon or reflow-tube X a pure quality of the generated carbonic-acid gases is caused to reflow into the laboratory about six (6) inches above the blast; thus the injected cold wind becomes inflamed in contact with the hot carbonic acid, the blast becoming a reducing agent on ores.

Having described the construction and operation of my invention, my claim is stated as follows:

1. The combination of the circumferential angle C, laboratory B, tuyere N, and reflow-tube X, as and for the purposes described.

2. The combination of the tuyere M, cold-air entrance-tube Y, reflow-tube X, and cap K, substantially as described.

In testimony that I claim the foregoing I have hereunto set my hand this 24th day of June, 1871.

THEOP. L. R. SCHEUNER.

Witnesses:

L. B. THURMAN,
C. N. GOULD.