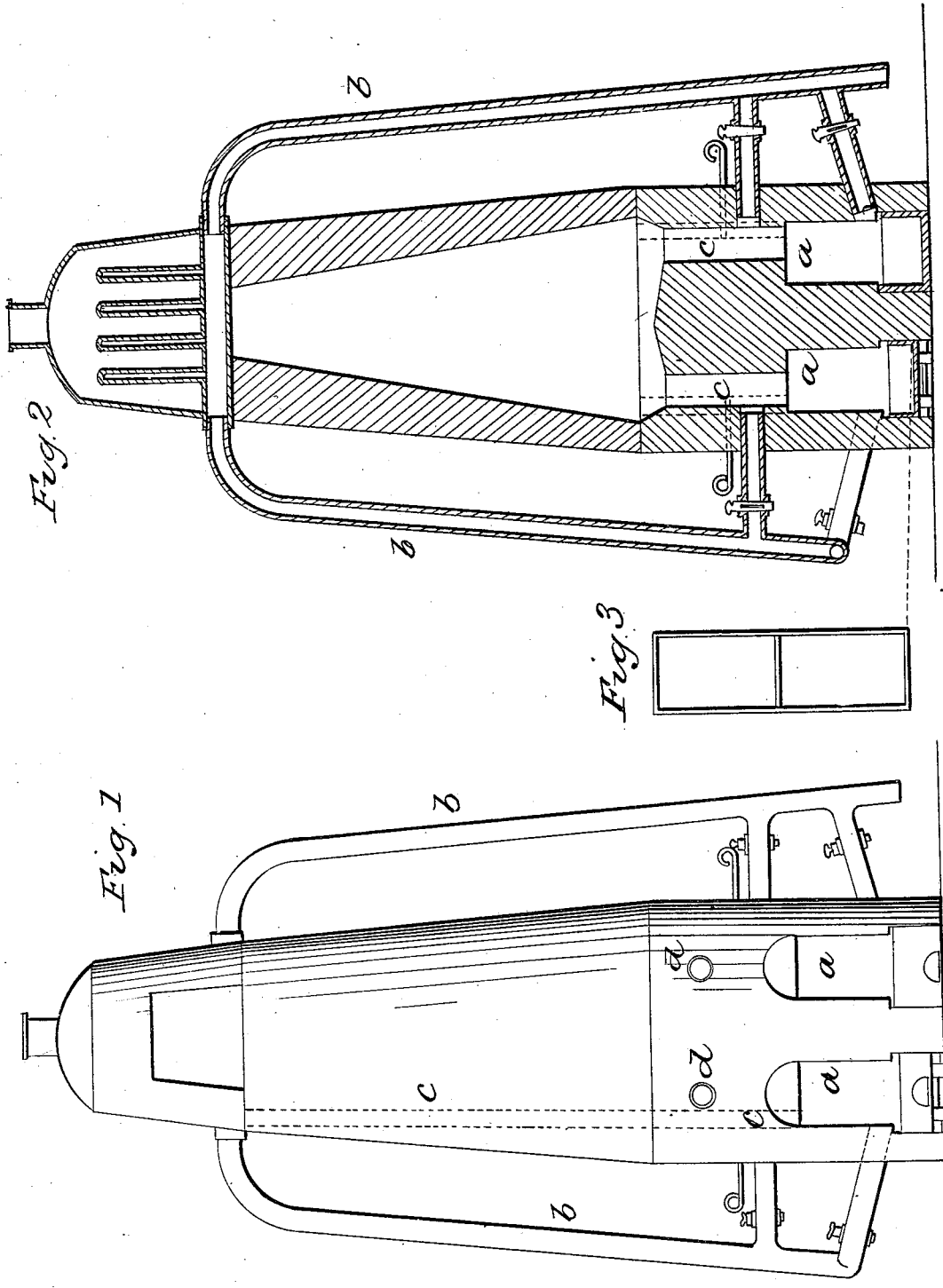


L. SIBERT.
Blast Furnace.

No. 6,894.

Patented Nov. 20, 1849.



UNITED STATES PATENT OFFICE.

LORENZO SIBERT, OF WOODSTOCK, VIRGINIA.

COMBINATION OF A DOUBLE TRAVELING HEARTH WITH A BLAST-FURNACE.

Specification forming part of Letters Patent No. 6,894, dated November 20, 1849.

To all whom it may concern:

Be it known that I, LORENZO SIBERT, of Woodstock, in the county of Shenandoah and State of Virginia, have invented a certain new and useful Improvement in Furnaces for Making Iron from the Ore; and I do hereby declare that the following is a full, clear, and exact description of the principle or character which distinguishes it from all other things before known, and of the usual manner of making, modifying, and using the same, reference being had to the accompanying drawings, which are a part thereof, in which—

Figure 1 is a side elevation. Fig. 2 is a vertical section. Fig. 3 shows the portable modified refining-hearth.

My improvement is for the purpose of converting iron directly from the blast-furnace into malleable iron by a peculiar construction of the furnace, whereby I am enabled to keep up the heat in the blast-furnace without interruption while decarbonizing the iron.

The construction is as follows: The blast-furnace from the top down to the boshes is like those now in common use. The boshes are single or double, according to the size of furnace, the quantity of iron, blast, or other causes, of which the iron-master must judge. The drawings represent a double bosh, the center part being elevated so as to form a division between the squares, which are two in number, and placed on each side. Beneath the squares of the hearth I form refining-arches *a a*, in which the refining-hearths are situated. The air is heated at the tunnel-head in the ordinary way, and is conducted down through the blast-pipes *b*, from which there are two tuyeres, the upper one being situated in the same position as those in the ordinary blast-furnaces. The other one leads into the refin-

ing-hearth. Each branch is furnished with a stop-valve to shut off the blast. From the refining-arch there is a flue, *c*, formed in the side of the stack that opens into the tunnel-head cap and carries off the gas above.

In using the furnace constructed as above described, I work the blast-furnace in the ordinary way; and when the refining-furnace below is charged, I stop the blast of the blast-furnace on that side, and by passing through the square a tube, *d*, through which a stream of water is made to pass, I support the burden while the bloom is being refined. At the same time the tuyere on the opposite side is in full action, and the other refinery is charging, by which means the furnace is kept constantly in action. When one refining-arch is used, the bosh, &c., is formed like those in the common blast-furnaces, with the hearth in the center. I place in the arch what I denominate a "portable hearth"—that is to say, a hearth divided into two parts—and placed on rollers, so as to move back and forth within the arch, to bring one or other of the parts of the hearth under the square, and when a charge is obtained in one of the hearths or compartments, it is moved to one side, where it is brought under the action of the blast and refined, while at the same time the other compartment is being charged.

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

The combination of the double traveling hearth with a blast-furnace, in the manner and for the purpose as herein set forth.

LORENZO SIBERT.

Witnesses:

J. J. GREENOUGH,
WM. GREENOUGH.