G. POE.

Hearth for Blast Furnaces.

No. 804. Patented June 23, 1838.

Fig. 1.

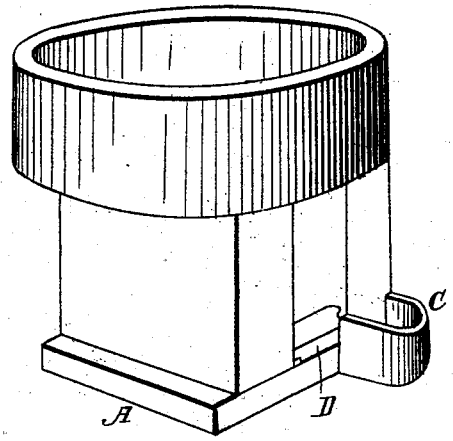
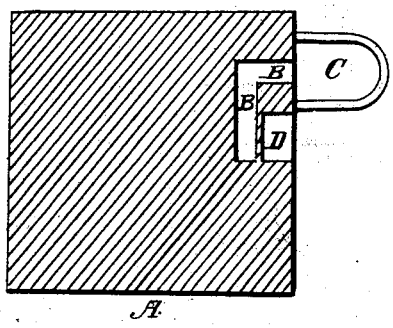


Fig. 2.



UNITED STATES PATENT OFFICE.

GEORGE POE, OF ELK RIDGE LANDING, MARYLAND.

IMPROVEMENT IN THE HEARTH OF THE BLAST-FURNACE.

Specification forming part of Letters Patent No. **804**, dated June 23, 1838.

To all whom it may concern:

Be it known that I, GEO. POE, of Elk Ridge Landing, Anne Arundel county, State of Maryland, have invented an Improvement in the Hearths of Blast-Furnaces, by which means the iron is let in and contained in a reservoir on the outside of the furnace-hearth, for the purpose herein fully set forth; and I do hereby declare that the following is a full and exact description thereof.

The nature and object of my invention consist in conveying the melted iron into a reservoir placed on the outside of the furnace-hearth by means of a channel cut entirely out of the bottom stone, the object of which is to have the iron in such a situation as to be accessible at all times for casting without interfering with the operation of the furnace. This channel may be differently formed, and the reservoir may be differently situated about the furnace-hearth, as may best suit the purposes for which this invention is intended; but for the purpose of illustration I will describe it in the manner in which I have tried it and found to answer the purpose perfectly well.

The drawings which accompany and make part of this specification show a section of an ordinary blast-furnace for smelting iron ore, which is all that is necessary to a clear illustration of my invention or improvement.

Any person that is in the least familiar with the construction of an ordinary blast-furnace hearth and the mode of obtaining access to the melted iron will at the first view of this specification understand the plan and see the advantages to be derived from its adoption.

Figure 1 represents a perspective view of an ordinary blast-furnace for smelting iron ore, to which I intend to apply my invention and improvement. A is the bottom stone, in which a channel is cut from the center of the hearth (from three to eight inches square or more) crosswise and running under the lower tuyere-stone to its center until it intersects another channel of similar dimension running lengthwise of the hearth and under the center of lower tuyere-stone until it communicates with the reservoir C, which may be cut out of stone or built of fire-bricks fourteen inches diameter and eighteen inches deep on the outside of the hearth. Fig. 2 represents a plan of the bottom of the hearth. B is the channel that is intended to conduct the iron into the reservoir C. D is the dam-stone as is used in ordinary blast-furnaces.

Although I have described the iron as passing through the channel under the tuyere-stone, it will be obvious to any one having the slightest knowledge of the construction of blast-furnace hearths that the iron may be made to pass through a channel into a reservoir placed at any point directly on the outside of the hearth that the founder or molder may fine most convenient to his casting-floor or other purposes; and, in order that the operation of casting may go on without interruption to the blast of the furnace, I place a cast-iron or other plate extending from the dam-stone to the tymp, and lute it over with clay, to prevent the blaze from issuing there, which would otherwise prevent the workmen from having free and easy access to the iron contained in the reservoir. I also keep the iron contained in the reservoir constantly (except when casting) covered over with fine charcoal or braze, to prevent the air from chilling the iron contained therein.

What I claim as my invention and improvement, and wish to secure by Letters Patent, is—

The mode of conveying the melted iron to the outside of the furnace-hearth, so as to have free and easy access to it without first pulling the cinder out, and then stopping the operation of the furnace while casting by means of the plan substantially the same as herein set forth.

GEO. POE.

Witnesses:
WM. P. ELLIOT,
WM. BISHOP.