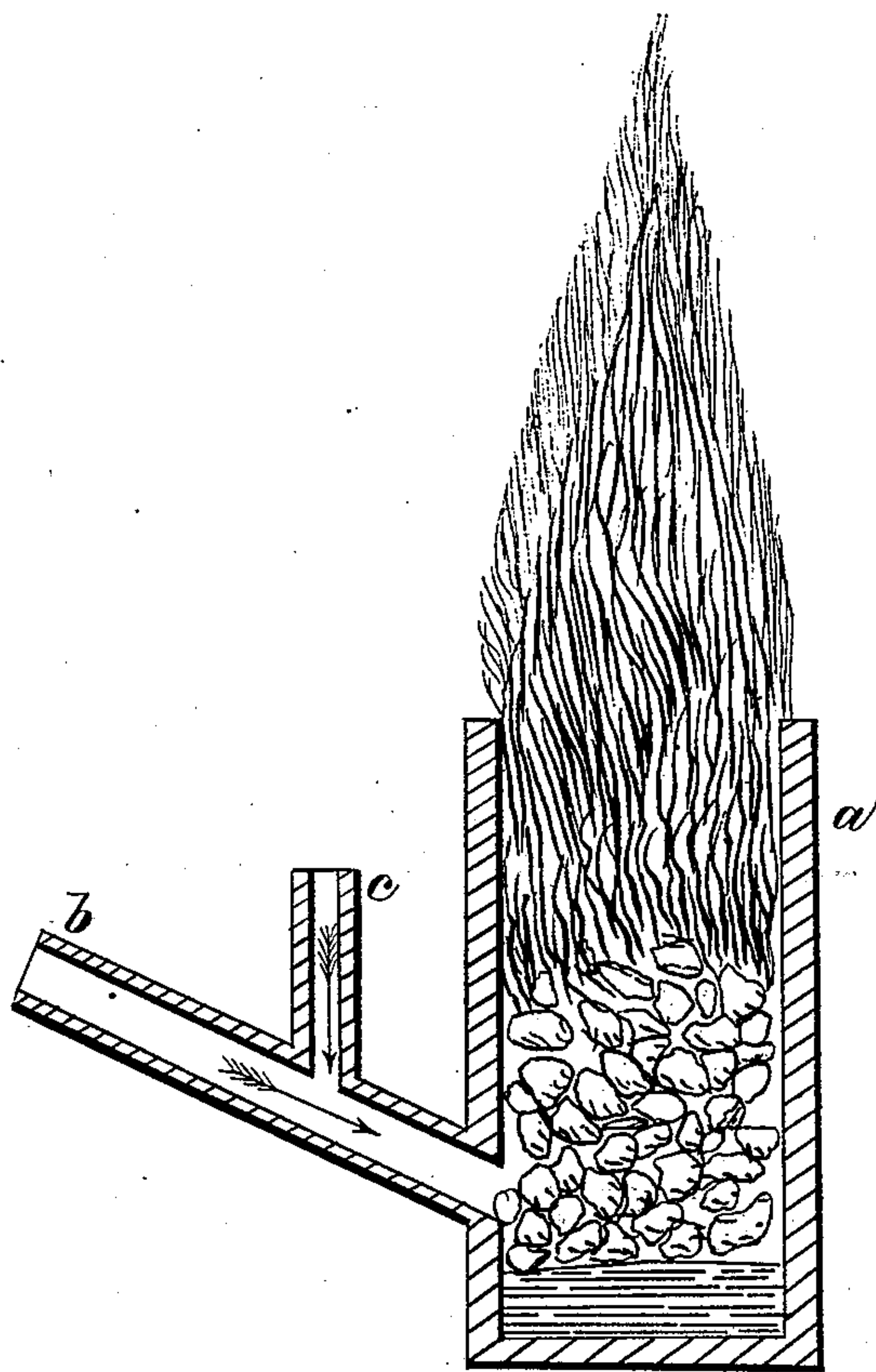


T. SHAW.  
Generating Carbonic Oxide.

No. 84,220.

Patented Nov. 17, 1868.



*Witnesses.*

*W. Turner.*

*A. Shaw.*

*Inventor.*

*Thomas Shaw.*

# UNITED STATES PATENT OFFICE.

THOMAS SHAW, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN GENERATING AND APPLYING CARBONIC OXIDE FOR TREATING METALS.

Specification forming part of Letters Patent No. 84,220, dated November 17, 1868.

*To all whom it may concern:*

Be it known that I, THOMAS SHAW, of the city and county of Philadelphia, Pennsylvania, have invented a new and improved mode of generating carbonic oxide for the purpose of deoxidizing and assisting in the melting of metals; and I hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawing and to the letters of reference marked thereon.

My invention consists in the employment of hydrocarbon fluids in the manner and for the purpose as hereinafter described.

The object of my invention is to prevent air-blast from oxidizing the fluid or semi-fluid metals by converting the oxygen into carbonic oxide rapidly, as hereinafter described.

In order to enable others to use and practice my invention, I will proceed to describe its operation.

On reference to the accompanying drawing, which forms a part of the specification, the sketch represents a vertical section through an ordinary pot-shaped furnace, of which *a* is the furnace; *b*, the pipe for conveying the air blast; *c*, the pipe for conveying the carbon fluid into the air-pipe and furnace, for the purpose as hereinafter described.

The apparatus is put in operation in this

wise: The metal (iron, for instance,) is placed alternately with layers of solid fuel in furnace *a*. The fire is started in the usual manner, and blast-pipe *b* is to communicate with a blower for the purpose of furnishing air of ordinary blast-pressure. When the metal is at a low red heat the hydrocarbon fluid is to be introduced through pipe *c* (which can communicate with a tank containing the fluid) in quantities sufficient to convert the oxygen employed into carbonic oxide, which conversion is done on entering furnace *a*.

It will be observed that various methods can be employed for the introducing and combining of hydrocarbon fluids with air. I therefore do not wish to confine myself to the exact method of introducing the fluid.

I do not claim broadly the use of hydrocarbon vapors and air as fuel for heating metals; but

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

The employment of hydrocarbon fluids for the purpose of generating carbonic oxide for operating on heated metals, as described.

THOMAS SHAW. [L. S.]

Witnesses:

ROBERT HUTCHINSON,  
WILLIAM MYERS.