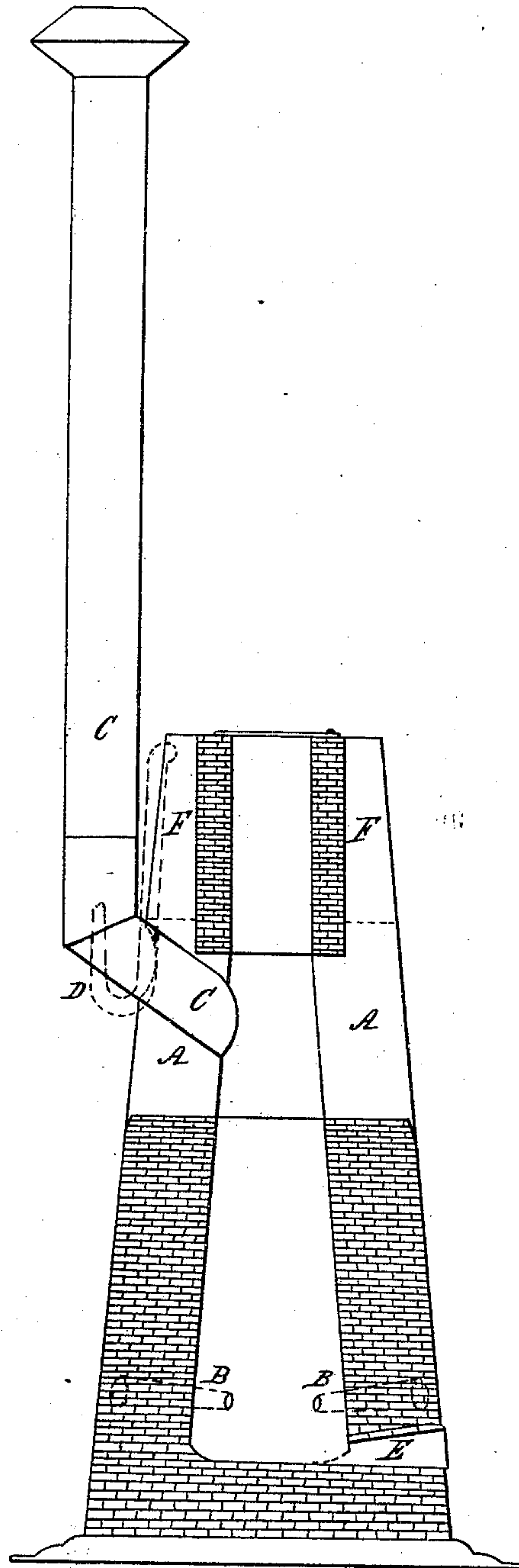


J. L. GILL, Jr.  
Smelting Furnace.

No. 57,701.

Patented Sept. 4, 1866.



Witnesses:

*John A. Milburg, Secy.*  
*Henry C. Sargent*

Inventor.

*John L. Gill, Jr.*

# UNITED STATES PATENT OFFICE.

JOHN L. GILL, JR., OF COLUMBUS, OHIO,

## IMPROVED SMELTING-FURNACE.

Specification forming part of Letters Patent No. 57,701, dated September 4, 1866.

*To all whom it may concern:*

Be it known that I, JOHN L. GILL, Jr., of Columbus, in the county of Franklin and State of Ohio, have invented a new and Improved Mode of Constructing Smelting or Melting Furnaces; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawing, and to the letters of reference marked thereon.

My invention consists in constructing the upper portion of a smelting-furnace as a steam-boiler, the boiler so arranged that the fire in the furnace will generate steam in the boiler, and that the steam so generated, or any part of it, may be admitted into the stack, and cause a partial vacuum in the furnace; also, placing a number of tubes from the inside to the outside of the furnace for the purpose of admitting a current of air to the inside. The air being drawn into the furnace by the vacuum produces a blast which may be increased or decreased at will by regulating the quantity of steam admitted into the stack by a valve in the steam-pipe.

To enable others skilled in the art to make and use my improvement, I will proceed to describe my invention.

The lower part of the furnace is constructed similar to the ordinary way, built of brick, with an opening at the bottom (shown by E) for drawing off the metal.

B B represent the tubes or openings through the furnace to admit of a flow of atmosphere.

A A represent the steam-boiler, and F F the steam-dome, which is lined with brick.

C C represent the fire-flue and stack for assisting in producing the blast.

D represents the steam-pipe, passing from the steam-dome down and up into the bottom of the stack.

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

Constructing a cupola or smelting furnace in such a manner as to allow of a part of the upper portion of such cupola or smelting furnace being made from a hollow steam-boiler for generating steam to be used in the production of a blast, or for any other purpose, as described above.

JOHN L. GILL, JR.

Witnesses:

JNO. S. HOLLINGSHEAD,  
HENRY C. SERGEANT.