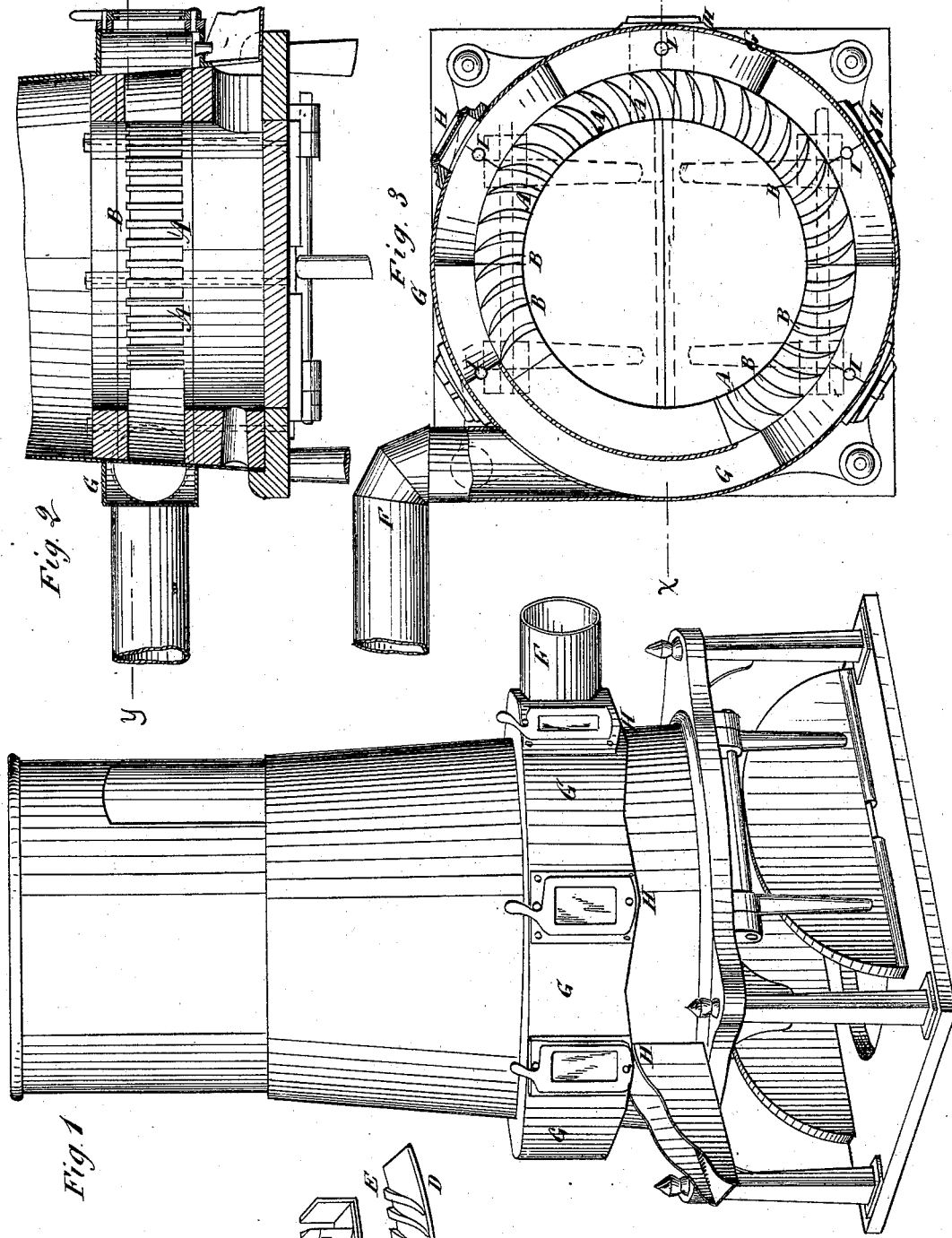


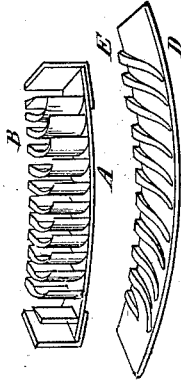
**J. BLAKENEY.**  
**Cupola Furnaces.**

No. 5,980.

Patented July 27, 1875.



**WITNESSES:**  
*C. Nevoux*  
*A. J. Terry*



**INVENTOR:**  
*James Blakeney*  
 BY *Wm. H. [Signature]*  
**ATTORNEYS.**

# UNITED STATES PATENT OFFICE.

JAMES BLAKENEY, OF SPRINGFIELD, OHIO.

## IMPROVEMENT IN CUPOLA-FURNACES.

Specification forming part of Letters Patent No. **165,980**, dated July 27, 1875; application filed June 5, 1875.

*To all whom it may concern:*

Be it known that I, JAMES BLAKENEY, of Springfield, in the county of Clarke and State of Ohio, have invented a new and Improved Cupola-Furnace, of which the following is a specification:

The invention will first be fully described in connection with drawing, and then pointed out in the claims.

Figure 1 is a side perspective view of my improved furnace. Fig. 2 is a sectional elevation of the lower portion, taken on the line *xx* of Fig. 3. Fig. 3 is a horizontal section taken on the line *yy* of Fig. 2. Fig. 4 is a perspective view of a section of the tuyere, and Fig. 5 is a perspective view of a section of the cover of the tuyere.

Similar letters of reference indicate corresponding parts.

Figs. 2 and 3 represent the tuyere, which is composed of a circular flat plate, A, with the curved chutes B and a covering-plate, D, which may have ribs E, corresponding to the chutes or not, as may be preferred. These plates are made in sections of suitable length for convenience in handling and for strength, and built into the wall of the cupola, the chutes being inclined relatively to the direction in which the air is blown into it through the pipe F to arrest the circular motion, and direct it into the center of the cupola. G is the case, ex-

tending around the cupola, and inclosing the space in which the air is conducted to the tuyere. The bottom of this chamber is made a little irregular to form hollows H at suitable intervals, to cause the metal to flow to the escape-openings I in case it overflows through the tuyere. The openings I will be closed with fusible plugs of lead or other material, to be melted out by the molten metal. In the elevation (also in the section) may be seen the taper form of the cupola which I propose to employ for condensing the air and retarding the escape of the heat, to utilize it to a greater extent than it can be when the escape is more free, by reason of the uniform size from bottom to top.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The combination, with cupola, of flat circular plate A, having curved inclined chutes B, plate D, and pipe F, as and for the purpose described.

2. The combination, with tuyere, of the case G, having irregular hollows H in bottom, and openings I, as and for the purpose specified.

JAMES BLAKENEY.

Witnesses:

JAMES S. BRYANT,  
CHAS. E. PARSONS.