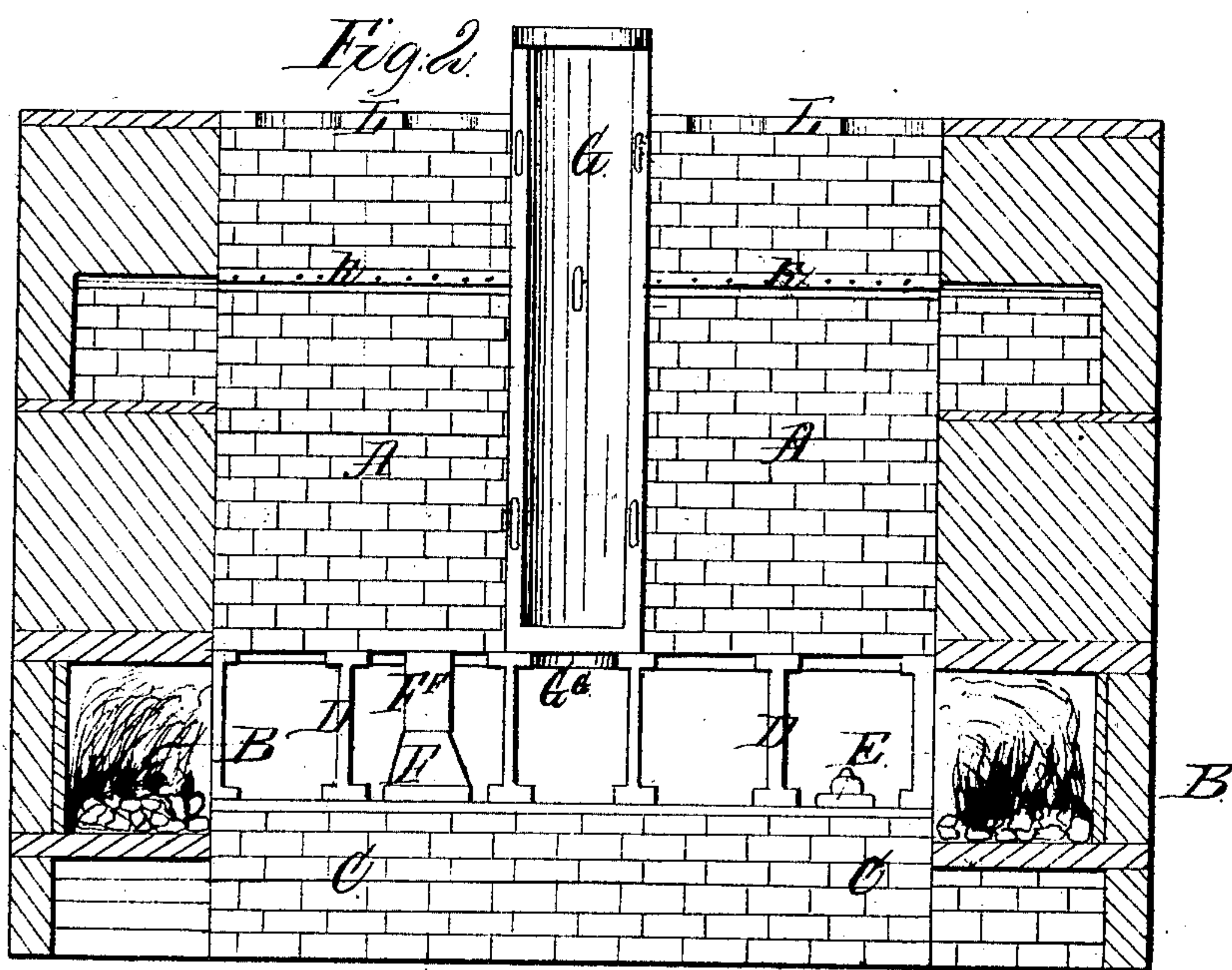
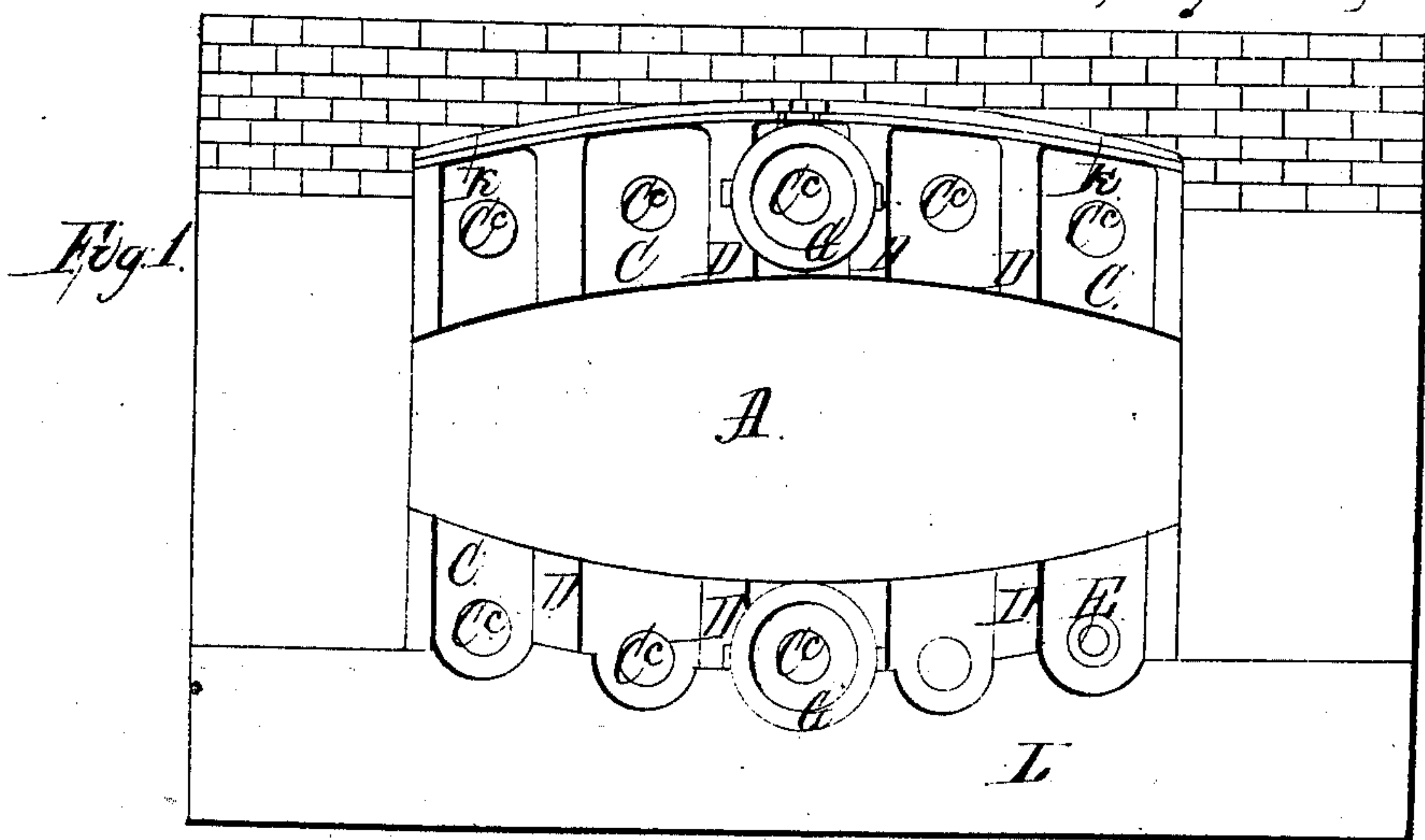


J. Aston,

Casting Pipe.

N<sup>o</sup> 82,065.

Patented Sep. 15, 1868.



Witnesses:  
Oscar Bickell.  
W. J. Smith.

Inventor:  
John Aston.

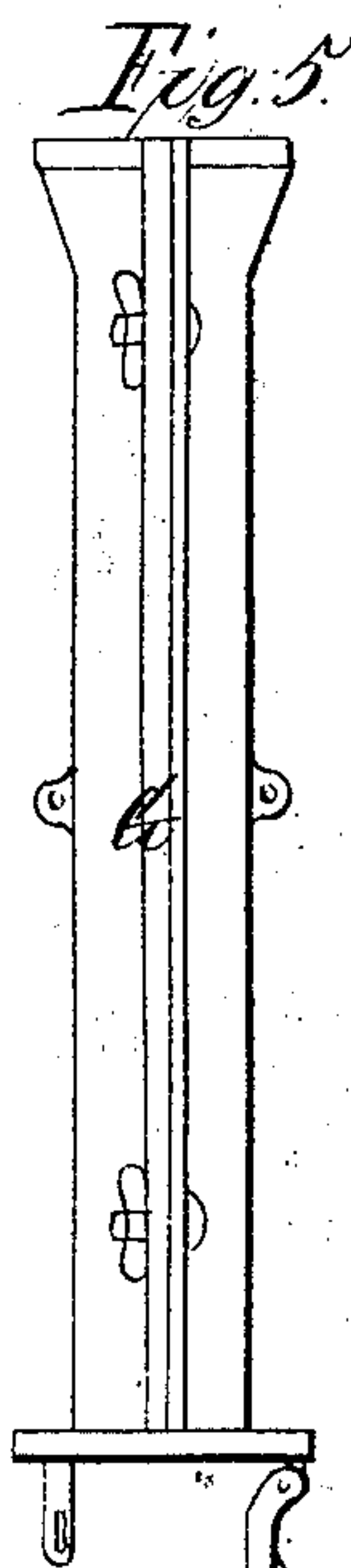
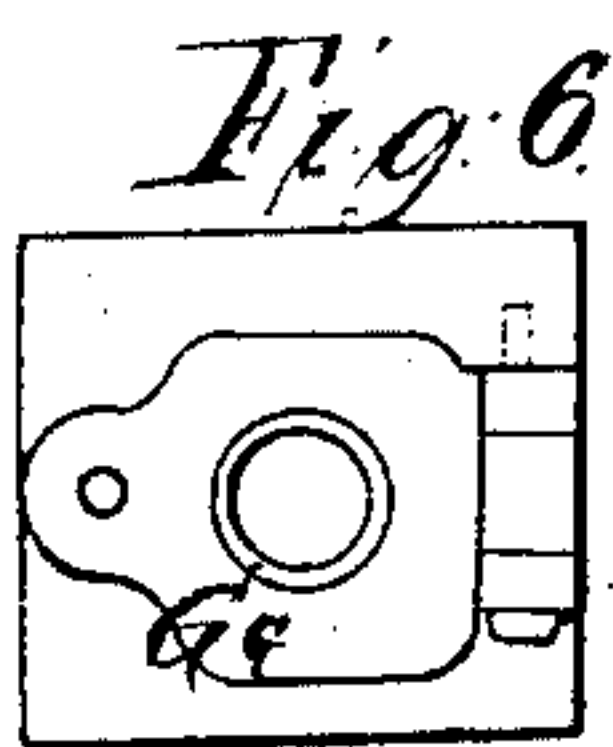
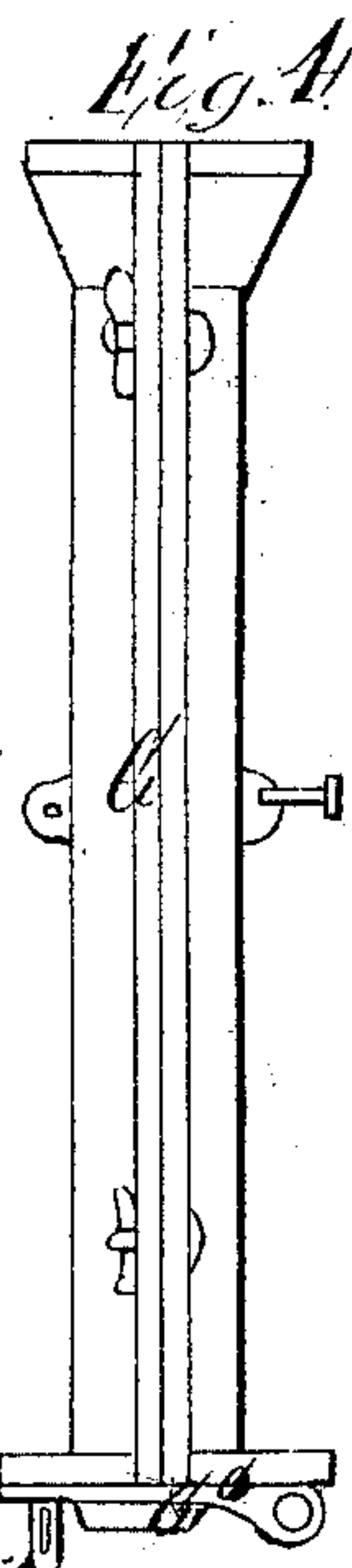
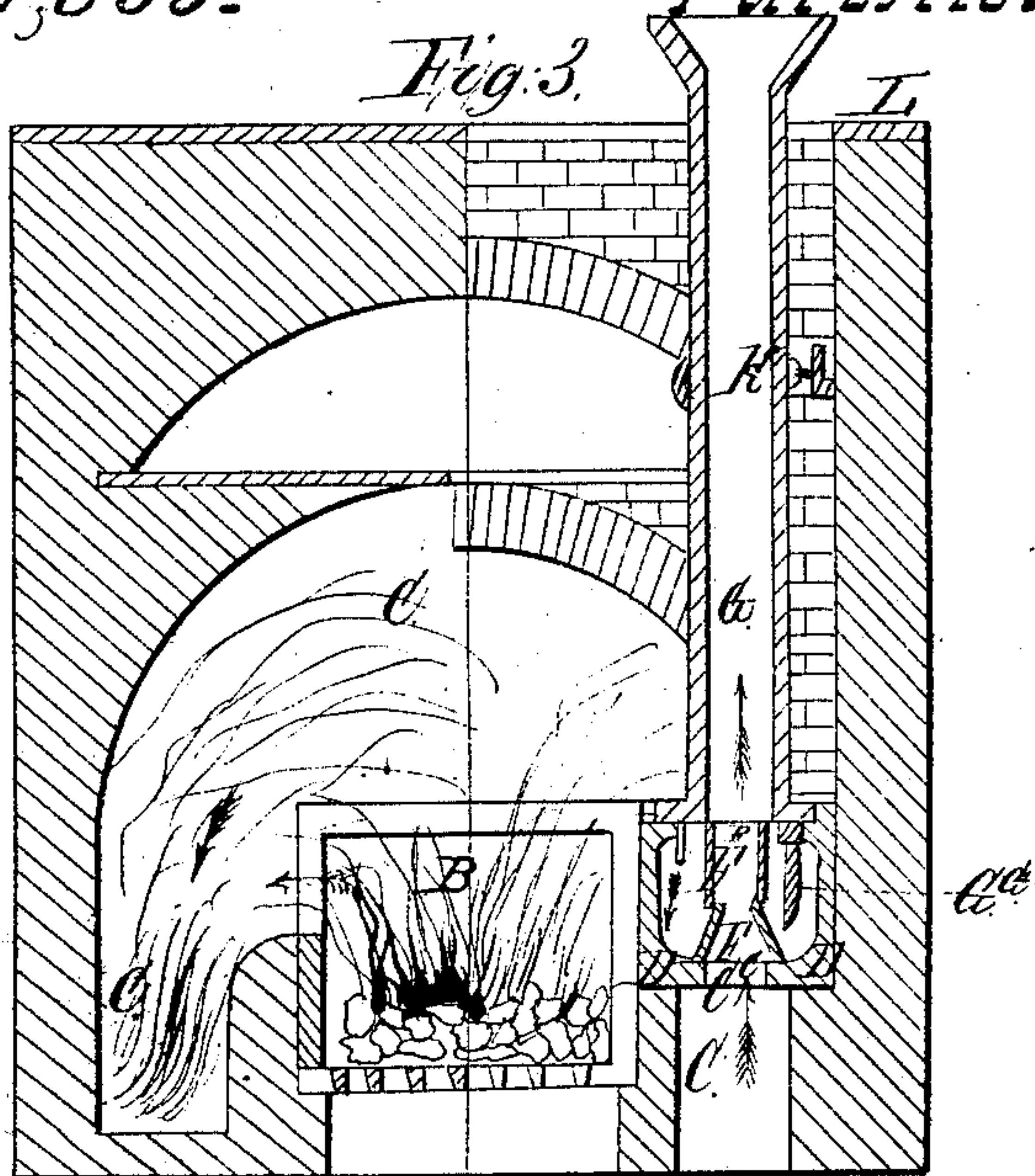
J. Aston,

2 Sheets, Sheet 2.

Casting Pipe.

N<sup>o</sup> 82,065.

Patented Sep. 15, 1868.



Witnesses  
Receved Beckett.  
W. H. Smith.

Inventor,  
John Aston.



# UNITED STATES PATENT OFFICE.

JOHN ASTON, OF PITTSBURG, ASSIGNOR TO WILLIAM SMITH, OF ALLEGHENY CITY, PENNSYLVANIA.

## IMPROVEMENT IN MOLDING PIPES.

Specification forming part of Letters Patent No. 82,065, dated September 15, 1868.

### *To all whom it may concern:*

Be it known that I, JOHN ASTON, of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Pits for Making and Drying Molds for Cast-Iron Pipes; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

The nature of my invention consists in making a deep pit with square ends and oval-shaped sides; by also providing a suitable furnace at each end of the pit and near the ground-floor, which furnaces have flues which traverse along the sides of the before-mentioned pit; by also providing a series of circular orifices or outlets on the top of the before-mentioned flues; by also providing a series of frame-work, which I call "ramming-up stools," which are above and rest on the top of the before-mentioned flues, so arranged that one of the outlets before mentioned will be in the center between each arm of the aforesaid frame; by also providing a stopper to close up the outlets before named; by also providing an annular nozzle of a tapered form, on which is placed a sliding thimble; by also providing an ordinary pipe-flask with a hinged lid or door at its base; by also providing a cast-iron bar of an L section, which is placed along each side wall of the before-mentioned pit, which bar is pierced with a series of small holes; by also providing a side plate, cut out with a series of semicircular orifices, which fit the circle or diameter of the aforesaid flask, and act as a rest for them when in position.

In the accompanying drawings, Figure 1 is a plan of my improved pit; Fig. 2, a longitudinal section, showing flask, nozzle, and stopper; Fig. 3, two half cross-sections, the right-hand one illustrating the passage of the fire or hot air through the flue, up the nozzle and sliding thimble, and through the flask, the left-hand one illustrating the construction of the fire-grate, bridge-wall, and flue of the furnace; Fig. 4, an elevation of pipe-flask, showing hinged door or lid fastened; Fig. 5, an

elevation of pipe-flask, showing hinged door opened; Fig. 6, a plan of hinged door.

A represents the pit; B, the furnaces; C, the flues; C<sup>c</sup>, the outlets in the flues; D, the ramming-up stools; E, the stopper; F, the nozzle; F<sup>r</sup>, the sliding thimble; G, the pipe-flask; G<sup>a</sup>, the hinged door or lid; K, the cast-iron bars; L, the side plates.

The mode of operating my improved pit is as follows, viz., by closing the hinged door G<sup>a</sup> of the pipe-flask G and placing the flask G, by means of cranes or suitable machinery, on the ramming-up stool D; then the molding is done in the ordinary manner; then, by slackening the hinged door G<sup>a</sup>, so that it falls open, and then placing the nozzle F underneath the flask and over one of the outlets C<sup>c</sup>, and pushing upward the sliding thimble, so that it will pass up an inch or two into the mold in the flask G; then, by lighting a fire in the furnaces B, the heated air, gases, and smoke pass along the flues C through the outlet C<sup>c</sup>, nozzle F, sliding thimble F<sup>r</sup>, and through the flask G, and thus dry the mold.

The use of the stopper E is to close up the outlets C<sup>c</sup> of the flues C and prevent the escape of the heat from the furnaces B when not wishing to dry the molds.

The advantage arising from the use of my improvements in pits is that heretofore the molding has been done in a different compartment than the drying, thus causing the flasks and molds to be moved from the molding-pit to the drying-kiln, and injuring the molds by shaking during their traverse.

Since the whole operation of molding, drying, and casting can be done in my pit without moving the flask, it insures better castings, and saves time, extra labor, and, necessarily, expense.

Having thus described the nature, construction, and operation of my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combined arrangement of the flask G and hinged door G<sup>a</sup>, substantially as described.

2. The pit A, furnaces B, with their flues C and outlets C<sup>c</sup>, ramming-up stools D, stoppers

E, nozzle F, and sliding thimble F', the bars K, and side plates L, when combined and arranged substantially as herein described, and for the purpose set forth.

3. Drying pipe-molds by means of passing currents of heated air or gases through them without removing them from the pit in which the operations of molding and casting are carried on, substantially as described.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

JOHN ASTON

Witnesses:

PERCEVAL BECKETT,  
W. H. SMIT.