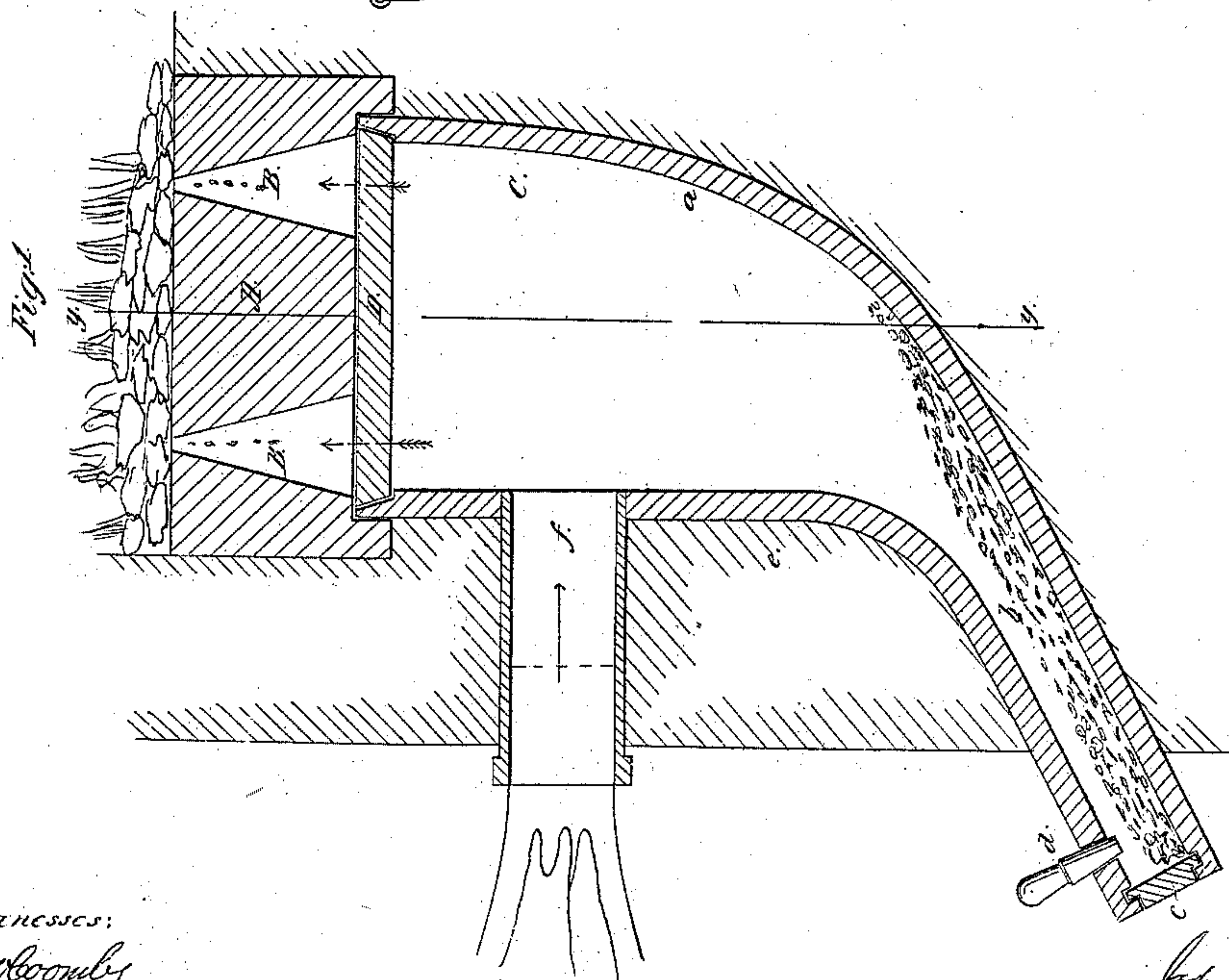
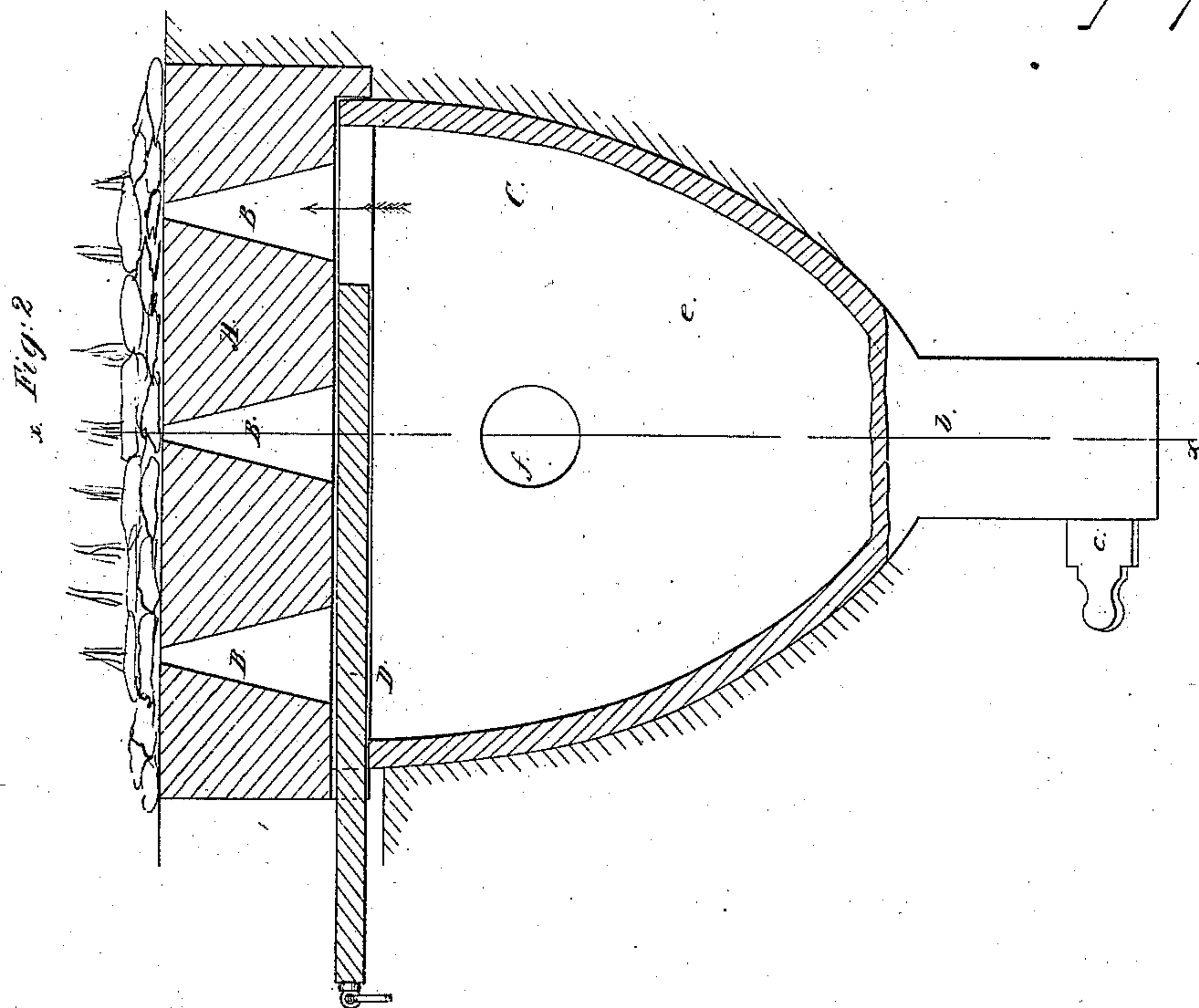


*J. Cavender,*

*Tuyere,*

*No. 33,132.*

*Patented Aug. 27, 1861.*



Witnesses:  
*Robt. Combs*  
*Wm. Tusch*

Inventor:  
*John Cavender*  
by  
*Wm. Tusch*



# UNITED STATES PATENT OFFICE.

JOHN CAVENDER, OF MILTON, OHIO.

## BLACKSMITH'S HEARTH.

Specification of Letters Patent No. 33,132, dated August 27, 1861.

*To all whom it may concern:*

Be it known that I, JOHN CAVENDER, of Milton, in the county of Miami and State of Ohio, have invented a new and Improved Blacksmith's Hearth; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making part of this specification, in which—

Figure 1, is a vertical section of my invention, taken in the line *x x* of Fig. 2; and Fig. 2, a vertical section of the same, taken in the line *y y* of Fig. 1.

Similar letters of reference indicate corresponding parts in the two figures.

The object of this invention is to obtain a hearth for blacksmiths' use which will be durable, admit of being very readily cleansed, and by which the fire may be kept clear or free from cinders and ashes, and regulated in size or area as circumstances may require.

The invention consists in the employment or use of a hearth-plate, provided with conical or taper perforations, and placed over a box provided with a curved side, a horizontal slide, and a pipe to receive the bellows nozzle; all being arranged as hereinafter described, to effect the desired end.

To enable those skilled in the art to fully understand and construct my invention, I will proceed to describe it.

A, represents the top or hearth-plate, which may be of cast-iron about two inches thick, of any suitable area and of rectangular form. This hearth-plate is provided with holes or perforations, B, of conical or taper form, as shown in both figures. There may be any number of perforations B.

The hearth-plate A is placed at the top of a box, C, which may be of sheet or cast metal—the latter would be preferable. This box C has a curved front side, *a*, and it terminates in an inclined spout or chute, *b*, which projects out of the masonry at the back of the forge; the spout or chute having a slide or door, *c*, at its end, and a plug, *d*, in its top, as shown in Fig. 1. The back side, *e*, of the box C is straight, and a pipe, *f*, is inserted in it to receive the bellows nozzle, as shown in red outline in Fig. 1.

D, represents a slide which is fitted horizontally in the upper part of the box C, directly underneath the hearth-plate A. This slide is of cast-iron, and it is arranged to slide freely in and out of the box C.

The box C is fitted in suitable masonry shown in red, the hearth being arranged in proper relation with a flue as usual. The operation will be readily seen. The fire receives its blast through the box C, and perforations B, and a greater or less number of the latter may be exposed by adjusting the slide D, and the area of the fire may be increased or diminished as may be required, by exposing more or less holes. By having the perforations B of taper form, they cannot become choked or clogged, but admit of a free passage of ashes and cinders through them; and when the box C requires to be cleansed, the slide D is closed and the door *c* at the end of chute *b* opened. By then blowing into the box C, all its contents will be expelled through the chute *b* at the back of the forge. When it is necessary to subdue the blast (as is often the case), the plug *d* is removed, and this admits of a vent for the blast, and a light draft is the consequence.

The device, it will be seen, is extremely simple and efficient, and may be constructed at a moderate cost. The conical form of the perforations B effectually prevents their choking or clogging, and is an essential feature of the invention.

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

1. The hearth-plate A, having conical or taper perforations B, in combination with the box C, provided with the pipe *f*, slide D, and chute *b*, the latter having the door *c* at its end; all arranged as and for the purpose set forth.

2. In combination with the chute *b* of box C, and perforated hearth-plate A, the plug *d*, for the purpose of regulating the blast as set forth.

JOHN CAVENDER,

Witnesses:

HENRY DAVIS,  
C. COWAN,