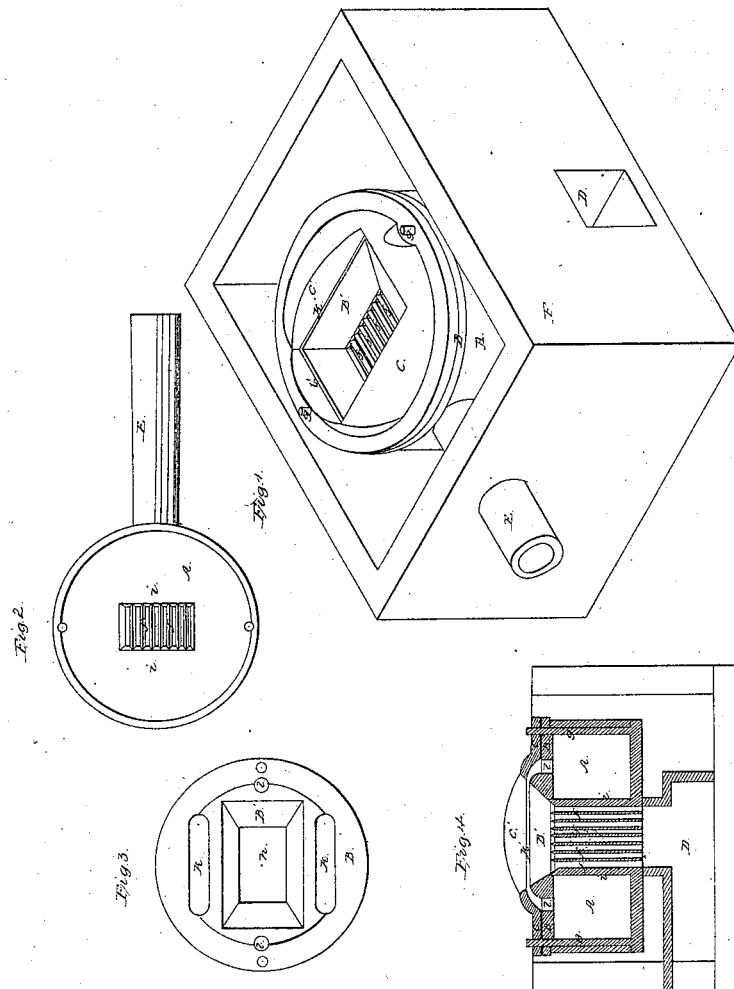


*J. R. Habbs,*

*Tuyere,*

*No. 4,760,*

*Patented Sept. 15, 1846.*



# UNITED STATES PATENT OFFICE.

JAMES R. HOBBS, OF HUNTSVILLE, ALABAMA.

## BLACKSMITH'S FORGE.

Specification of Letters Patent No. 4,760, dated September 15, 1846.

*To all whom it may concern:*

Be it known that I, JAMES R. HOBBS, of Huntsville, in the county of Madison, and State of Alabama, have invented a new and Improved Self-Cleaning Blacksmith's Forge or Furnace; and I do hereby declare the following to be a full and exact description of its construction and operation, reference being had to the accompanying drawings, making a part of this specification.

The nature of my invention consists in constructing a blacksmith's furnace in such a manner that the fire chamber will keep itself perfectly clear of ashes and cinders, and in so arranging the grating and furnace that the atmosphere shall circulate through and around them in such a manner as to regulate their temperature and prevent their being injured or destroyed by intense heat.

In the accompanying drawings Figure 1, is an isometrical projection of my improved forge or furnace; Fig. 2, is a plan of an air chamber (A,) having a vertical rectangular box *i* made fast at its center, in which the grating *f, f*, is secured; E, is a pipe which conveys air from a bellows to the air chamber; Fig. 3, is a plan of a plate, B, which incloses the air chamber A, and forms a portion of the fire chamber of my improved furnace; Fig. 4, is a transverse section through my improved furnace, showing the combination of the different parts of the same.

The same letters refer to corresponding parts in all the figures.

I construct my improved self cleaning furnace in the following manner: the grate bars, *f, f*, of the same are placed in a rectangular box *i*, cast solid to the center of the air chamber A; the depth of the grate bars correspond with the height of the box *i*, that incloses them: Their extra depth, is for the purpose of enabling the atmosphere to keep down their temperature and prevent their being injured by intense heat.

I place over and inclose the air chamber A, with the plate B, which is accurately fitted to the same, and secured in its position by the bolts *g, g*; there is a rectangular opening *h*, in the center of the plate B, which receives and incloses the top of the rectangular bar *i*, containing the grating *f, f*. Surrounding the rectangular opening *h*, there rises the inclined sides B', forming the chamber of combustion of my improved furnace—: *k, k*, and *l, l*, are openings in the

plate B, for allowing the air to pass from the air chamber to the furnace. Over the plate B, I place the plate C, having a raised rectangular opening in its center, the inclined sides C' of which, correspond with the inclined sides B' of the plate B, and form with those the fire walls of the furnace. There are spaces *h', l'*, between the inclined sides (B', C') of the plates B, C, through which the blast of air passes from the chamber A, to the chamber of combustion of the furnace. The ashes and cinders from the furnace, fall freely between the grate bars *f, f*, into an ash box D, not being obstructed, by a blast of air passing through the grate bars—the furnace is thus kept free and unobstructed from ashes or cinders. The ash box D, passes through the side wall F, of the furnace, through which the ashes and cinders are removed as they fall from the furnace. The ash box D, serves also to convey cold air to and through the grate bars *f, f*, protecting them from the injurious effects of the fire, and also acts in concert with the blast from the air chamber A,—through the apertures *h', l'*—in promoting combustion in the furnace. The blast of air from the bellows as it enters the air chamber A, impinges directly upon the side of the grating box *i*, and serves to keep down the temperature of the same, and the grating inclosed therein. The circulation of the air entirely around and through the walls of the furnaces serves also to keep down its temperature, and prevents its being injured by the intense heat of the fire. F, is the forge wall, inclosing the furnace constructed in any well known or usual manner.

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

The construction of a blacksmith's furnace in such a manner as to allow the cinders and ashes to freely escape and prevent their clogging the fire chamber, by placing grate bars *f, f*, at its base, opening into an open air chamber D, (leading out at the side of the forge), and then admitting the blast through the sides of the fire chamber above the tops of the grate bars, substantially as herein set forth.

J. R. HOBBS.

Witnesses:

Z. C. ROBBINS,  
SIMON WHITON.