

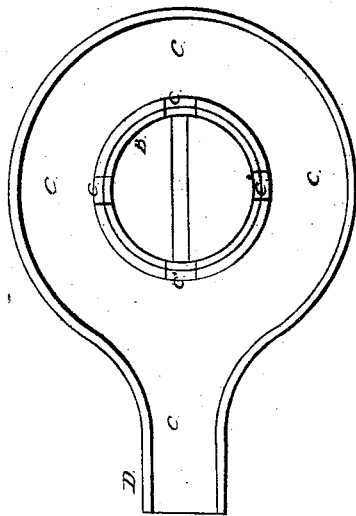
*E. Kaighn,*

*Tuyere,*

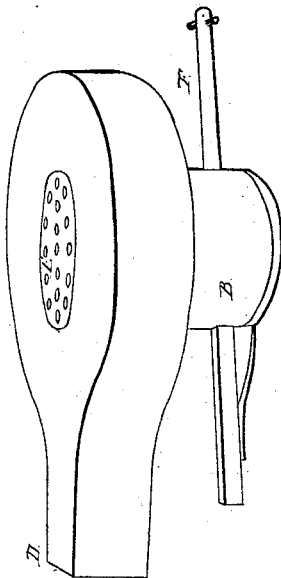
*N<sup>o</sup> 2,030.*

*Patented Apr. 2, 1841.*

*Fig. 2.*



*Fig. 1.*



# UNITED STATES PATENT OFFICE.

ELIAS KAIGHN, OF CAMDEN, NEW JERSEY.

BLACKSMITH'S TWYER BY WHICH THE BLAST IS HEATED AND THE TOP OF THE TWYER MADE TO SERVE AS A HEARTH FOR THE FORGE.

Specification of Letters Patent No. 2,030, dated April 2, 1841.

*To all whom it may concern:*

Be it known that I, ELIAS KAIGHN, of Camden, Gloucester county, State of New Jersey, have invented a new and useful Improvement in Twyers, and that the following is an exact description of the same, reference being had to the drawings, making a part of the same.

Figure 1 represents a perspective view, Fig. 2 horizontal section through the middle of the side.

Similar letters in the drawing refer to similar letters in the specification.

The nature of my improvement is to enable a clear and unobstructed draft from the bellows to reach the coals of the furnace—and the outside of the twyer being exposed to the heat, heats the air within, as it is passing through the flue, and thereby enables me to use it for hot blast furnaces also for melting iron &c.

The twyer is a box made of cast iron, or any other metal; may be round as that in the drawing, square or oblong, having a side or sides, a top and bottom leading off into a circular shaped hollow nozzle or stem. The pipe of a bellows is to be inserted in this stem.

The twyer may be from 2 to 4 inches in height and from 1 to 2 feet long, including the stem aforesaid. In the top and in the bottom piece about the middle of them, they each have a circular opening of 6" diameter or thereabouts, in which is inserted the circular ash box B which extends from the top to a point 3 or 4 inches below the bottom plate of the twyer. All the above is cast in one piece—all the space surrounding the ash box aforesaid, and between the top and bottom plate and sides of the twyer. I call the air flue C, which enters into the circular area of the steam D. Various holes C' C' C' which may be square, rectangular or circular are made and passed through the vertical side of the ash box B, into the flue C, so that the air from the flue C passes through the before mentioned apertures to the fire. A circular cover E, perforated with any required number of holes, fits on the top of the circular opening of the ash

box, B, and can be removed at pleasure. The lower end of the ash box aforesaid is closed by a circular lid, which is passed from under the hearth, when required by sliding the rod F outward. This rod is supported in the sides of the ash box above the lid, in circular openings—a small strip of iron or steel is passed from the bottom of the lid aforesaid to a suitable point on the rod F to make the lid fit tight to the mouth of the ash-box.

Instead of the ash box reaching below the bottom plate before mentioned of the twyer I make the bottom plate aforesaid, the bottom of the ash box, and dispense with the circular opening in the said plate.

This twyer is intended to be used with or without the cover E.

The twyer is placed in a suitable position horizontally. The nose of the bellows being inserted into the nozzle or stem of the said twyer, it is now ready for operation, which is carried on by the air passing from the bellows around the flue C, into the hollow aperture of the ash box B, by means of small apertures therein, and so to the fire.

The top of this twyer may be used as a forge hearth, the coals being placed over it, and the cover aforesaid, and the ash box aforesaid may be used as a furnace, the perforated cover being removed, the air from the bellows in both cases entering the nozzle of the twyer and passing through the flue C, and then through the apertures in the ash box to the fire.

What I claim as my improvement and wish to secure by Letters Patent is—

The construction of the twyer with a flue surrounding the ash box B in combination with said ash box as set forth—also in combination with the foregoing, the arrangement of the upper surface of the twyer, as the hearth of the forge and the perforated cover E for admitting air to the flame &c all as set forth.

ELIAS KAIGHN.

Witnesses:

JOHN KAIGHN,  
ALLEN SAUNDERS.