

P. H. & F. M. ROOTS.

Tuyere.

No. 108,519.

Patented Oct. 18, 1870.

FIG. 1

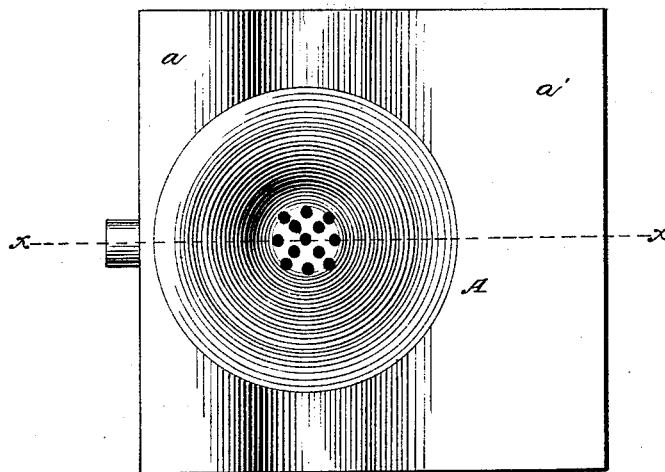
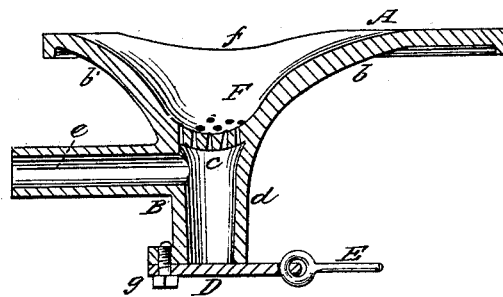


FIG. 2



WITNESSES:

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by Dodge & Mann

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United States Patent Office.

PHILANDER H. ROOTS AND FRANCIS M. ROOTS, OF CONNERSVILLE,
INDIANA.

Letters Patent No. 108,519, dated October 18, 1870.

IMPROVEMENT IN THE CONSTRUCTION, JOINTLY, OF FIRE-BEDS AND TUYERES.

The Schedule referred to in these Letters Patent and making part of the same

To all whom it may concern:

Be it known that we, PHILANDER H. ROOTS and FRANCIS M. ROOTS, of Connorsville, in the county of Fayette and State of Indiana, have invented certain Improvements in Fire-Beds and Tuyeres for Blacksmiths' and other Forges, of which the following is a specification, reference being had to the accompanying drawing.

Our invention consists of a metallic fire-bed for forges, made in novel form, for giving shape to the body of the fire.

Also, of a combined metallic fire-bed and tuyere, made in a novel form, and together and entire.

Also, of a metallic fire-bed with a perforated bottom, and a pipe or vertical passage below said bottom, with a tuyere entering its side, and a gate pivoted to its lower end.

In the drawing—

Figure 1 is a top-plan view; and

Figure 2 is a vertical cross-section on the line $x\ x$ of fig. 1.

The object of this invention is to construct, in a strong and durable manner, a metal fire-bed and tuyere in a form convenient for application and use in any place suitable for a blacksmith's or similar forge, as well as one that may be readily set up that will require no dressing, and will secure an economical as well as thorough combustion of the fuel.

In constructing our fire-bed and tuyere, we cast the bed A, tuyere B, with the perforated bottom C, vertical passage d , for ashes and gas, and induction air-passage e , in one piece, and in the form clearly shown in both figures.

The fire-bed A consists of a nest, or concave or curved recess, with walls $b\ b'$, forming nearly two arcs of circles, and expanding out as they rise into a plate, $a\ a'$, of a square, circular, or other shape, and so as to form a part of the hearth of the forge.

The bottom of the fire-bed is provided with perforations, C, which open into the vertical passage d of the tuyere B, to allow the ashes to fall into the passage d , which has pivoted to its under-side a gate or valve, D, at g , so as to turn horizontally and keep the passage closed when required, and so that it may be opened for the removal of the ashes when desired.

In place of a gate or valve an ordinary cap may be used. When the valve is used, it should have a rod, E, connected to it, for convenience in operating it.

The induction-pipe or air-passage e , which is cast solid with the fire-bed, is made slightly tapering in-

side, at the end which receives the pipe from the blower or the nozzle of a bellows, and is so connected that its opposite end opens into the passage d at its side, under the perforated bottom C.

The opposite sides of the top plate $a\ a'$, on opposite sides of the fire-bed, are made, when desired, with depressions f , so that, when the middle portion of a long piece or bar of iron is to be heated it can be placed fairly, and to the best advantage, in the fire for that purpose.

The hearth of the fire-bed, or that portion of it about the nest, is shown in the drawing as square; but it is obvious that it may be circular or of any other desired form.

As the induction-passage leading from the blower to the tuyere enters the vertical passage, through which the ashes fall, at right angles, it will be seen that it cannot be obstructed or interfered with by the ashes.

In this way we produce a combined fire-bed and tuyere that may be readily set up in a blacksmith's or similar forge, the fire-bed being made in the form or shape demonstrated by experiment to be best adapted for giving the best form to the fire.

As the whole is cast in one piece, there is nothing to get out of order. As there are no joints, there is no waste of the blast by leakage, and hence the whole of the blast is utilized and the best results secured.

The combination being in one piece, it can be readily taken out and put in place, without disturbing the other parts of the forge.

Having thus described our invention,

What we claim is—

1. A metallic fire-bed for forges, made in the form herein shown and described, for the purpose of giving shape or form to the body of the fire, as set forth.

2. A combined metallic fire-bed and tuyere for forges, when made in one entire piece, and in the form herein shown and described.

3. The fire-bed A, with its perforated bottom C, tuyere B, and vertical passage d , all made in one entire piece, with gate D, pivoted at the lower end of the passage d , the whole constructed and arranged as shown and described, and for the purposes set forth.

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Witnesses:

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