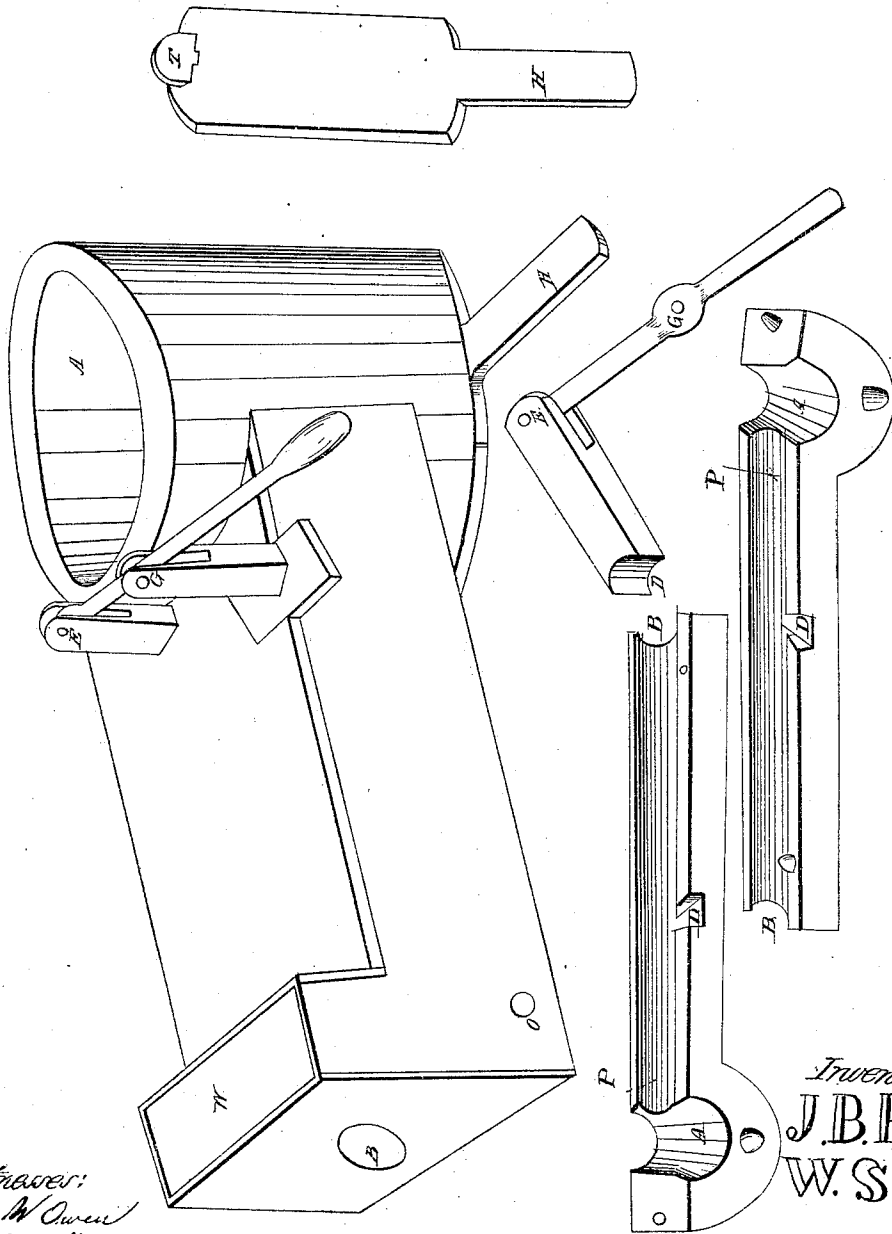


RAINES & OWEN.

Tuyere.

No. 69,247.

Patented Sept. 24, 1867.



*Drawn by:*  
*John W. Owen*  
*O. C. Bell*

*Inventors:*  
*J. B. Raines.*  
*W. S. Owen.*

# United States Patent Office.

JOHN B. RAINES AND W. S. OWEN, OF OSKALOOSA, IOWA.

*Letters Patent No. 69,247, dated September 24, 1867.*

## IMPROVED TUYERE.

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, JOHN B. RAINES and W. S. OWEN, of Oskaloosa, Mahaska county, State of Iowa, have invented certain new and useful improvements in "Tuyere Iron;" and 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, making a part of this specification.

Our invention relates to that class of "tuyere iron" in which water is used around the pipe to prevent adhesion of lava or cinders to the inside of the pipe, and around the portion of the forge upon which is placed the fire.

In the annexed drawings is seen a horizontal metal box, with an opening at the front and rear ends.

A represents the "duck's nest," or the portion of the forge where the fire is placed. This chamber has an opening in its bottom, under which is placed a bottom slide, H, having a thumb-screw which passes through the opening made for it, so as to allow the slide to be operated back and forth, and allow the cinders, &c., to pass out, and at the same time prevent the slide from being drawn from the under part of the chamber. The box is provided with a metal tube or pipe running from end to end, and with a suitable mouth to fit into the chamber A, as seen in the drawings. This pipe is smaller than the interior of the box, and opens (B) at the rear end, to allow the blast from the bellows to pass through, and directly into the chamber A. Directly above the rear end of the pipe is an opening, W, in the box, through which water is admitted into the box, so as to be around the tube, as aforesaid, and which is prevented from flowing into the chamber A by means of the collar formed on the mouth of the tube in the chamber. Near the chamber A, upon the top of the box, is a cut-off valve or damper, for preventing too free a flow of the blast. This valve is simply a lever secured to a stud, G, acting as a fulcrum, and provided with a bar, E, which passes through an opening in the box and an opening, D, in the pipe, so that the blacksmith or other operative can cut off communication by raising the outer end of the lever.

Having thus fully described our invention, what we claim as new, and desire to secure by Letters Patent, is—

The combination and arrangement of the box, provided with the tube, as constructed, with water-space around it, chamber A, bottom slide H, and damper D, when formed in the manner herein set forth, and for the purposes specified.

JOHN B. RAINES,  
W. S. OWEN.

Witnesses:

JOHN W. OWEN,  
O. E. BELL.