

M. POWE.

Tuyere.

No. 62,441.

Patented Feb. 26, 1867.

Fig. 1

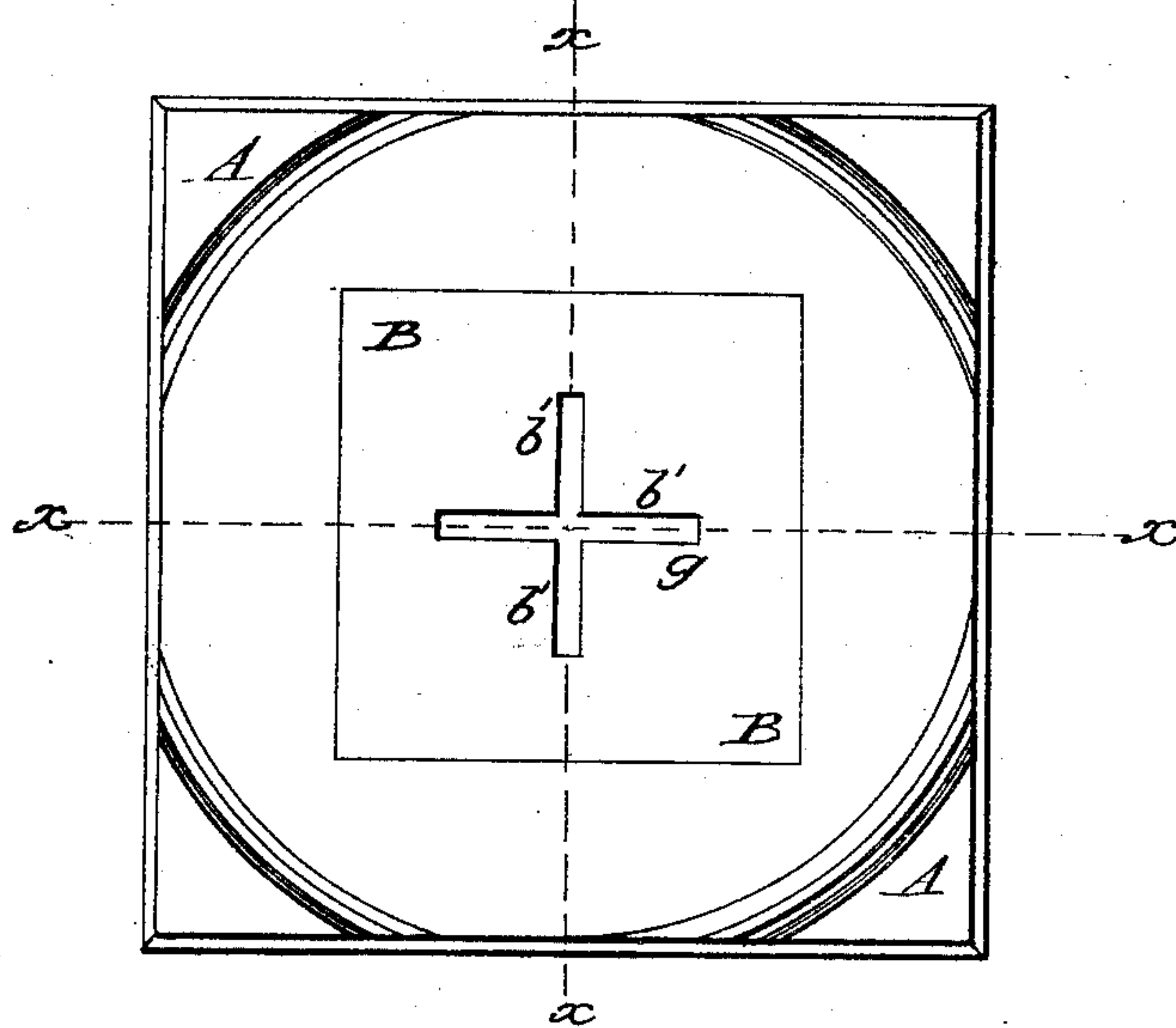
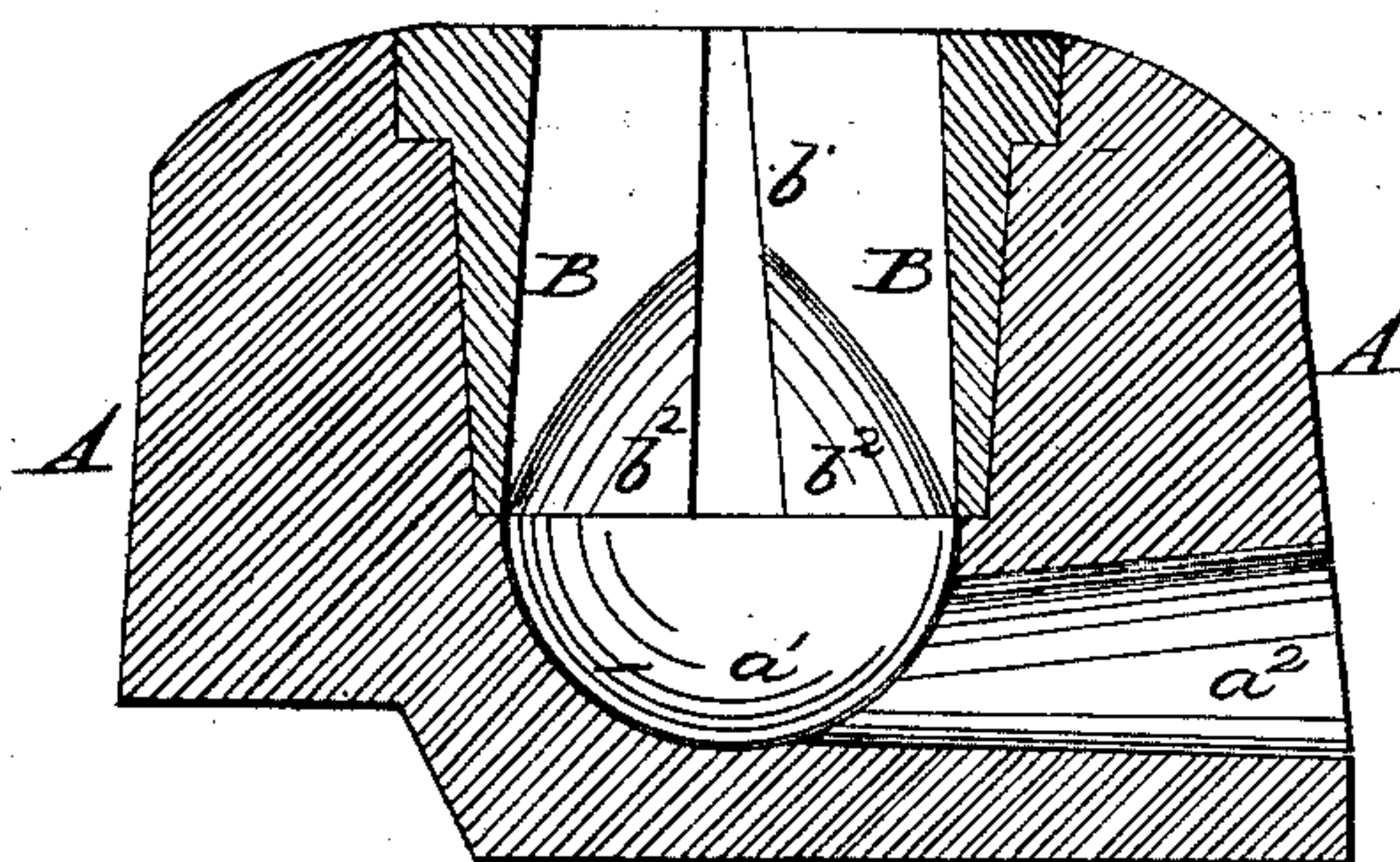


Fig. 2



Witnesses:

*Wm Dean Overell*  
*Chas A Scott*

Inventor:

*M. Powe*  
per *Wmms & Co*  
Attorneys

# United States Patent Office.

MOSES POWE, OF MOUNT BETHEL, PENNSYLVANIA.

*Letters Patent No. 62,441, dated February 26, 1867.*

## IMPROVEMENT IN 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 I, MOSES POWE, of Mount Bethel, in the county of Northampton, State of Pennsylvania, have invented a new and useful Improvement in Tuyere; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawing, forming a part of this specification, in which—

Figure 1 is a top view of my improved tuyere.

Figure 2 is a vertical section of the same, taken through the line *x x*, fig. 1.

Similar letters of reference indicate like parts.

My invention consists in the combination of a grate having a cross-shaped slot, and in its lower part a cone-shaped cavity with the box of the tuyere, having a hemispherical cavity below the grate, and a tapering pipe or channel for the introduction of the blast.

A is the box of the tuyere, the top of which is spherical in form, as shown in fig. 1. This form prevents the slag from following into or settling about the blast orifices in the grate, the blast itself keeping the ashes and other light substances from falling through the said orifices into the pipe or air-chamber. In the middle part of the box A is formed a square chamber, into which the grate B is fitted. In the lower part of the box A, beneath the grate B, is formed a hemispherical cavity or chamber,  $a^1$ , into the lower part of which opens the blast pipe or channel  $a^2$ , as shown in fig. 2. The pipe or channel  $a^2$  is made tapering, as shown, to concentrate the blast, which, striking against the curved sides of the cavity or chamber  $a^1$ , is reflected so as to pass up vertically through the slot in the grate B. The grate B is made in such a form as to fit exactly into the square chamber formed in the upper part of the box A, as shown in figs. 1 and 2; and the slot  $b^1$  in the said grate, through which the blast passes to the fire, is made in the shape of a square cross, as shown in fig. 1. This slot  $b^1$  is slightly enlarged or made wider as it descends through the grate B, as shown in fig. 2, to concentrate the blast as it is escaping from the tuyere into the fire, and thus intensify its effects, and give it sufficient force to prevent ashes, &c., from falling through the grate into the air-chamber  $a^1$  and pipe  $a^2$ . The lower part of the grate B is hollowed out or chambered so as to form a cone-shaped cavity,  $b^2$ , the circle of the lower edge of which coincides with the circle of the upper edge of the hemispherical cavity  $a^1$ , formed in the lower part of the box A, as before described. The effect of this cone-shaped cavity is to receive the blast from the hemispherical cavity  $a^1$ , and to so concentrate and guide it that it may easily and without being obstructed pass into the slot  $b^1$ . It will be observed that each of the air-passages or chambers of the tuyere is so constructed as to concentrate the blast while passing through it, and discharge said blast with greater force than it had when entering said passage or chamber.

I claim as new, and desire to secure by Letters Patent—

The box A, having a spherically-formed top, hemispherical chamber  $a^1$ , tapering channel  $a^2$ , and grate B, formed with a cross-shaped slot  $b^1$ , and cone-shaped cavity  $b^2$ , constructed and operating as herein shown and described.

MOSES POWE.

Witnesses:

WM. McMILLER,  
JOHN BRUCE.