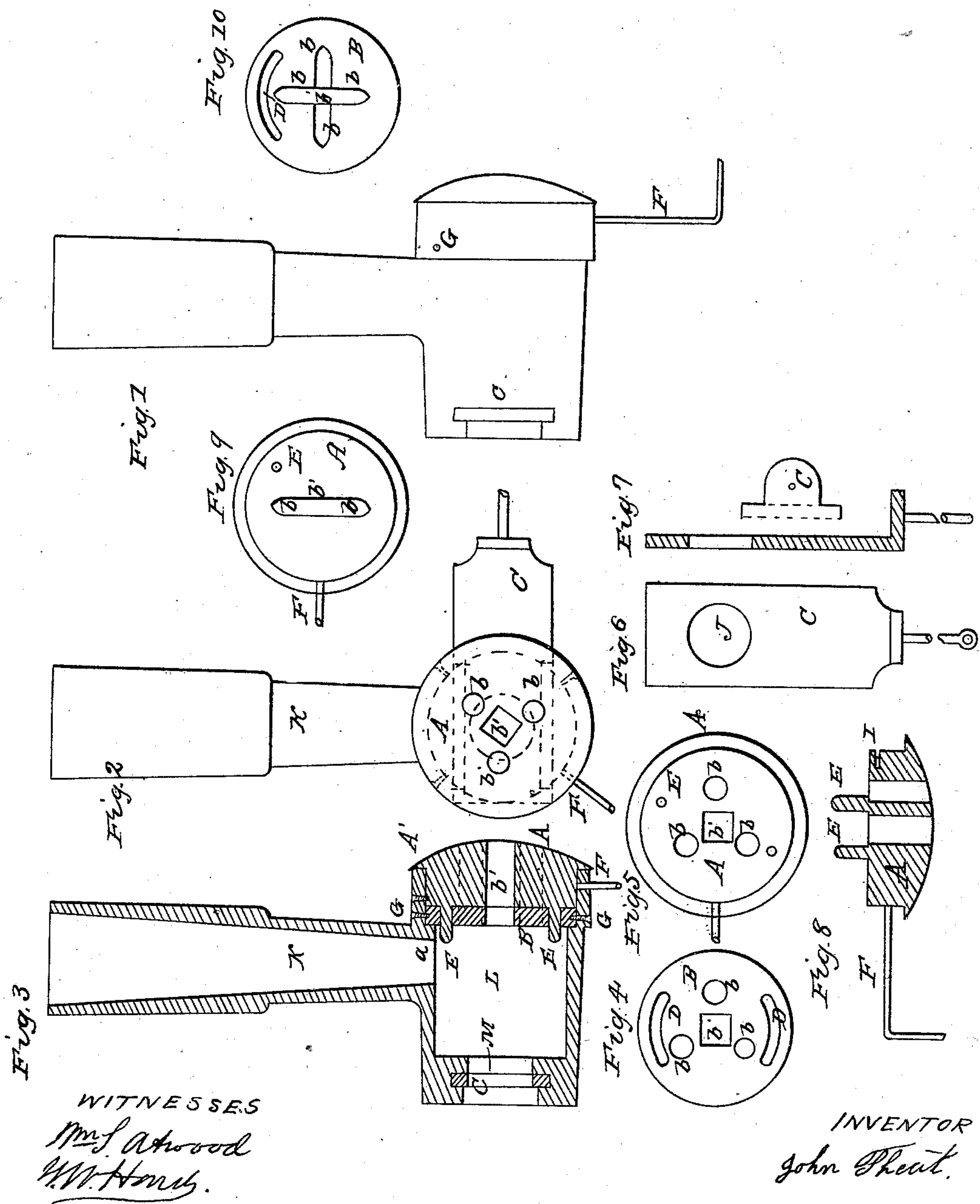


J. THEAT.

Tuyere.

No. 58,509.

Patented Oct. 2, 1866.



UNITED STATES PATENT OFFICE.

JOHN THEAT, OF DETROIT, MICHIGAN.

IMPROVEMENT IN TUYERES.

Specification forming part of Letters Patent No. 58,509, dated October 2, 1866.

To all whom it may concern:

Be it known that I, JOHN THEAT, of Detroit, in the county of Wayne and State of Michigan, have invented a new and useful Improvement in Tuyere-Irons for Forges; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, through letters of reference marked thereon, in which—

Figure 1 represents a side elevation of my invention; Fig. 2, a plan or top view of the same; Fig. 3, a vertical longitudinal section thereof; Fig. 4, a plan of the inner cover or diaphragm; Fig. 5, an inverted view of the outer cover; Figs. 9 and 10 represent the same as Figs. 4 and 5, with modified form of apertures; Fig. 6, a plan of the sliding bottom; Fig. 7, a vertical longitudinal section and an end view of the same; Fig. 8, a central vertical section of the outer cover.

The same letters of reference occurring in the several figures indicate corresponding parts.

The nature of my invention consists in a novel arrangement and construction of the tuyere for the greater facility of regulating the blast, both in power and direction; also, in the construction of the rotating cap of the tuyere, so as to conduct the fused slag and dust away from the blast-apertures in and the joints around the said cap or cover.

To enable others to understand the construction and operation of my invention I will proceed to describe it with reference to the drawings, in which—

K represents the neck of the tuyere into which the blast pipe or nozzle of the bellows is inserted, and communicates with a chamber, L, which I make of cylindrical form and enlarged at its upper end, so as to form a shoulder, *a*, above the aperture of the neck K. On this shoulder is supported a disk, B, perforated with any desired number of holes, *b*, and with one or more slots, D, in the arc of of a circle, near its periphery, and concentric with said disk, the purpose of which will be hereinafter more fully explained. This disk is secured in its place by set-screws G, pass-

ing through the sides of the cylindrical chamber L, and entering its periphery.

Above the disk B, and also entering the upper portion of the chamber L, and in contact with said disk, is fitted the cover A, which is formed convex on its upper surface and with a flange, A', at its upper edge, overlapping the edge of the tuyere-iron for the threefold purpose of shedding the fused slag and dust away from the blast-aperture excluding the dirt from these movable portions, which, if allowed to work in, would obstruct their operation, and also to prevent the waste of air from the blast. This cover is secured in its place by a set-screw, H, passing through the side of the chamber L, the point of which enters a groove, I, in the periphery of the cover, which, together with the lever F, made fast to the periphery of said cover on its opposite side, and passing through a slot in the upper portion of the chamber L, prevent the cover from tipping or being blown out of its seat by the force of the blast. This cover is also provided with one or more prongs, E, on its under side, which enter the slot D in the disk B, and thus regulate the extent of motion to be given to the cover A, to regulate the amount of blast, as when the prongs E are at one end of the slot D, the central hole, *b'*, only will be open for the passage of the blast, and when they are at the other end of the slots, the three apertures, *b*, will also be open, and by this oscillating motion of the cover the amount of blast may be regulated to any desired extent by the lever F.

The lower portion of the chamber L is provided with an aperture, M, and fitted with a sliding bottom, C, which is represented in Figs. 6 and 7. This bottom, when pushed in close, closes the aperture M, and, when pulled out to its full extent of motion, the aperture J therein comes opposite the aperture M, and allows the cinders and ashes that may accumulate in the chamber L to pass out, and thus keep the blast-pipe clear of all obstructions.

I am aware that a sliding bottom, made without the aperture J, as in mine, has been used before; but as it is frequently set in a solid brick hearth, it is liable to be drawn out

too far, and is difficult then to replace in the grooves to close it. I therefore do not claim it broadly.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

The combination of the convex or conical cover A, provided with a flange projection,

A', overlapping the walls of the mouth of the tuyere, with the stationary disk B and chamber L, when constructed and arranged substantially as and for the purpose set forth.

JOHN THEAT.

In presence of—

WM. Y. ATWOOD,
L. M. FOX.