G. D. Miller.

Tuyere,

No. 10,367. Patented Jan. 3, 1854.

Fig. 1.

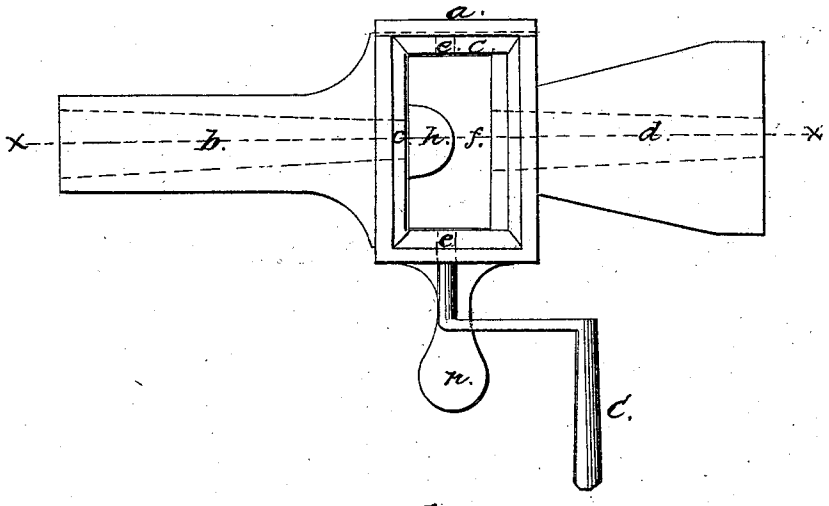


Fig. 2.

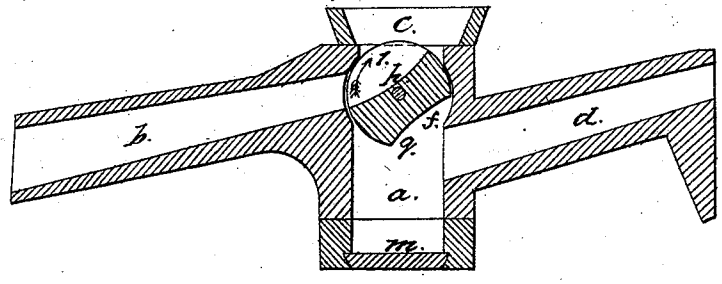
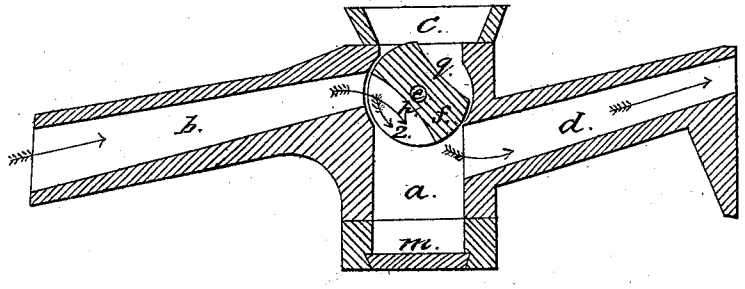


Fig. 3.



UNITED STATES PATENT OFFICE.

GEO. D. MILLER, OF NEW BERLIN, PENNSYLVANIA.

TWYER.

Specification of Letters Patent No. 10,367, dated January 3, 1854.

To all whom it may concern:

Be it known that I, GEORGE D. MILLER, of New Berlin, in the county of Union and State of Pennsylvania, have invented a new and useful Improvement in Twyers; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, forming part of this specification, in which—

Figure 1 is a plan of the apparatus. Fig. 2 is a vertical longitudinal section on line *x*—*x* of Fig. 1. Fig. 3 is a similar section showing the regulating cylinder in position to throw the blast through the front passage.

Similar characters of reference in the several figures denote the same part.

The object of my invention is to graduate the volume and intensity of the blast, and also to convey it when desired to the middle or front of the hearth.

It consists in the employment in front of the ingress passage of a notched cylinder, for closing either partially or entirely the mouth of said passage, it being also so arranged as to enable the blast to issue from the top of the twyer, or from a passage terminating at the middle of the hearth, according to the position of the graduating cylinders.

In the drawings *a* is the body of the twyer, *b* is the ingress passage, *c* the opening at the top, and *d* the egress passage leading to the middle of the hearth. Within the box *a* and movable upon the journals *e*, is the segment of cylinder *f*, having in one side the cavity or notch *h*. The bottom of the box is a slide *m* capable of being withdrawn by the handle *n* for removing the accumulation of foreign substances from the apparatus, the face *q* of the segment of cylinder *f* serving to convey around and discharge upon the slide all ashes and other substances which may enter the apparatus from the top.

The operation of my twyer is as follows:—The apparatus is secured in the forge in the same manner as other twyers, the crank C and handle *n* being outside of the brick work so as to be readily operated. The nozzle of the bellows is inserted in the ingress passage *b*, and with the segment of cylinder *f* in the position shown in Fig. 2, will give a full blast to the forge through the top of the twyer. By revolving the cylinder in the direction indicated by arrow 1, the mouth of the passage *b* is gradually diminished and the intensity of the blast consequently weakened. When the segment of cylinder *f*, has the position shown in Fig. 3, the current takes the direction indicated by the blue arrows, and will be weakened in intensity and diminished in volume, as the segment *f* is revolved in the direction of arrow 2. The face *q* of the segment *f* relieves the twyer of ashes and small cinders by carrying them around and depositing them upon the slide *m*, which when withdrawn, suffers the dirt thus collected to drop to the ground.

The advantages of this twyer consist in the regulating of the volume as well as the intensity of the blast, and also in the facility with which the point of egress can be changed, which when large pieces of iron are to be forged is of great importance, as they require the fire to be removed from the back of the forge and the heat to be concentrated near the middle of the hearth.

I do not claim the chamber *a*, passage *b*, outlet *c*, or valve *f*, as such are well known, neither do I claim an additional outlet when governed by an additional cock or valve; but

What I claim as my invention and desire to secure by Letters Patent, is—

The combination of the notched segment of cylinder *f* with the egress passages *c* and *d* for regulating and changing the direction of the blast substantially as herein fully set forth, when the apparatus is constructed with the additional passage *d*.

In testimony whereof, I have hereunto signed my name before two subscribing witnesses.

GEORGE D. MILLER.

Witnesses:
GEO. PATTEN,
BARLEY N. FERGUSON.