

C. M. MORGAN.

TUYERES.

No. 171,836.

Patented Jan. 4, 1876.

Fig. 1

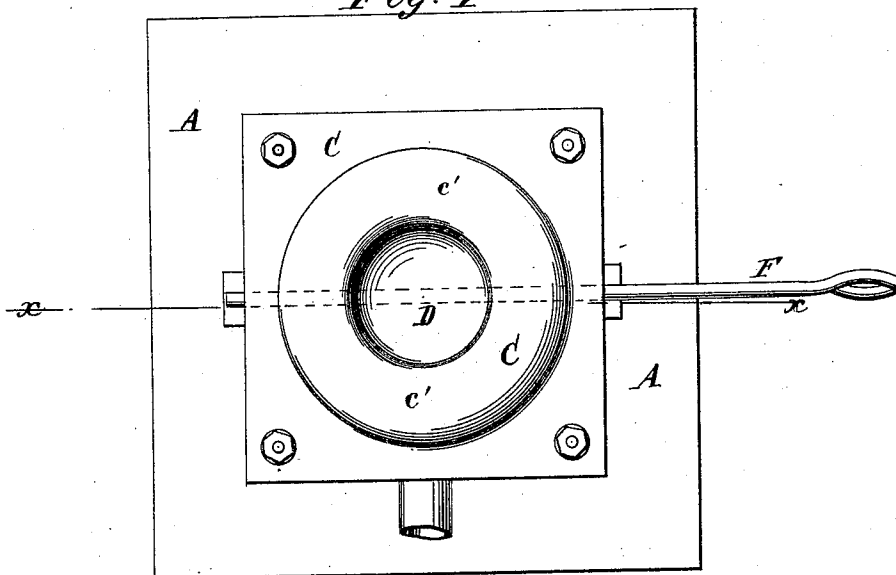


Fig. 2

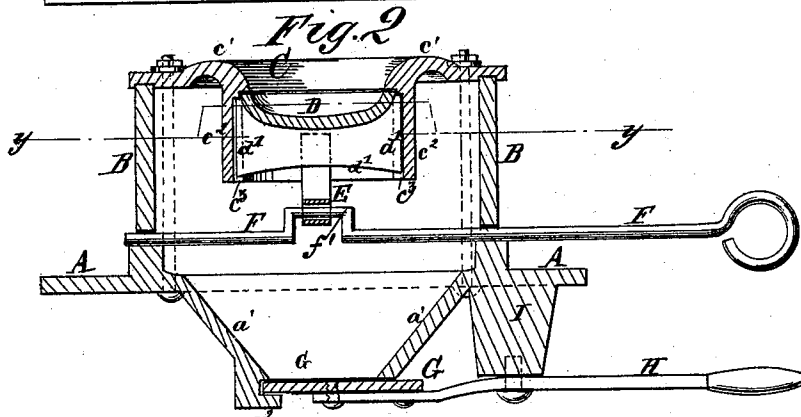
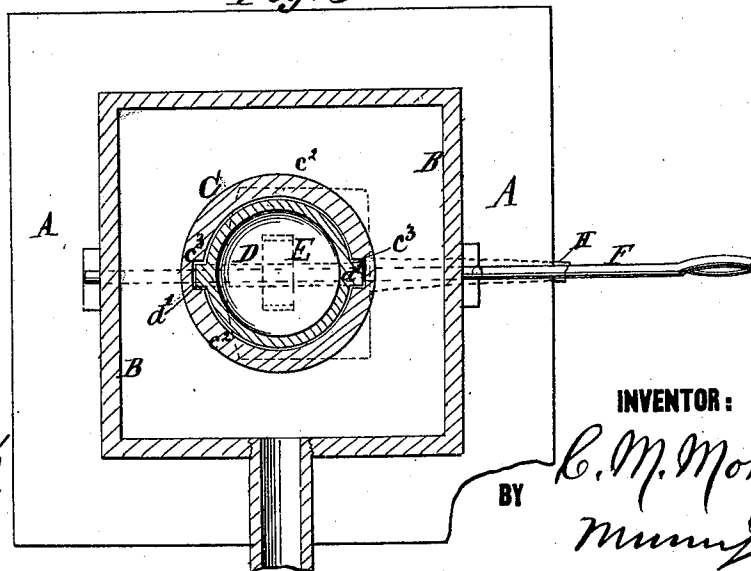


Fig. 3



WITNESSES:

A. W. Almqvist
A. T. Roberts

INVENTOR:

BY C. M. Morgan
Munn & Co.
ATTORNEYS.

UNITED STATES PATENT OFFICE

CHARLES M. MORGAN, OF HESPER, IOWA.

IMPROVEMENT IN TUYERES.

Specification forming part of Letters Patent No. **171,836**, dated January 4, 1876; application filed November 6, 1875.

To all whom it may concern:

Be it known that I, CHARLES M. MORGAN, of Hesper, in the county of Winneshiek and State of Iowa, have invented a new and useful Improvement in Tuyere-Iron, of which the following is a specification:

Figure 1 is a top view of my improved tuyere-iron. Fig. 2 is a vertical section of the same, taken through the line *x x*, Fig. 1. Fig. 3 is a horizontal section of the same, taken through the line *y y*, Fig. 2.

Similar letters of reference indicate corresponding parts.

The object of this invention is to furnish an improved tuyere-iron, which shall be so constructed as to give complete control of the blast, and enable it to be quickly changed for light, medium, and heavy work; which shall not be liable to become choked; and which may be adjusted to keep the fire alive when the blast is shut off.

The invention consists in the guide-tube or flange, the cup, the sliding bar, the connecting-rod, and the crank-rod, in combination with the sides and top of the wind-chamber, as will be hereinafter more fully described.

A is the base-plate, which projects beyond the wind-chamber B, to rest upon a wall and support the tuyere-iron. C is the top plate, which is securely bolted to the base-plate A, clamping the walls or case B of the wind-chamber between them. The top plate C has a hole through its center surrounded upon the upper side by a swell or bead, *c*¹, and upon the lower side by a tubular flange, *c*². D is the cup, which is perforated for the passage of the blast, and rests or is formed upon the top edge of a cross-bar, *d*¹, the ends of which enter vertical grooves *c*³ in the inner surface of the flange or tube *c*², to keep the cup D horizontal while moving up and down. To the bar *d*¹ is attached a forked connecting-bar, E, which has a loop or socket formed in its lower part to receive the crank *f* of the rod F, which works in bearings in the walls or case B, and the end of which projects, and has a handle formed upon it for convenience in turning the said rod to raise and lower the cup D. The middle part *a*¹ of the base-plate A projects downward in hopper form,

and the open bottom of said hopper-shaped projection is closed by a valve, G. The valve G is attached to a lever, H, which is pivoted to an arm, I, formed upon or attached to the base-plate A, so that the valve G may be easily turned beneath or away from the open bottom of the hopper-shaped projection *a*¹. The forward edge of the valve G, when closed, rests upon a flange, *a*², formed upon one edge of the hopper, *a*¹. The upper side of the flange *a*² and the lower side of the forward edge of the valve G, either or both, should be made inclined or wedge-shaped, so as to force the said valve to its seat air-tight. The blast is introduced through an opening in the side of the chamber B.

By this construction, by operating the crank-rod F, the cup D can be moved up and down easily, and can be held in any desired position.

The manner of controlling the blast is by raising or lowering the part D, thereby increasing or diminishing the opening for admitting the wind to the fire. Another purpose of the part D is that, by rising or lowering, it loosens the cinders that may have choked up the wind-passage to the fire, and causes all fine particles to fall into the chamber below, out of the way, thereby insuring a clear fire free from dirt.

By operating the lever H the valve G can be moved away from its seat, to allow any dust or cinders that may be in the wind-chamber to drop out, and by leaving said valve G open when the blast is shut off a sufficient quantity of air will pass up to keep the fire alive for a long time.

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

The guide tube or flange *c*², the cup D, the sliding bar *d*¹, the connecting-rod E, and the crank-rod F, in combination with each other and with the sides B and top C of the wind-chamber, substantially as herein shown and described.

CHARLES M. MORGAN.

Witnesses:

D. F. MORGAN,
W. W. WATKINS.