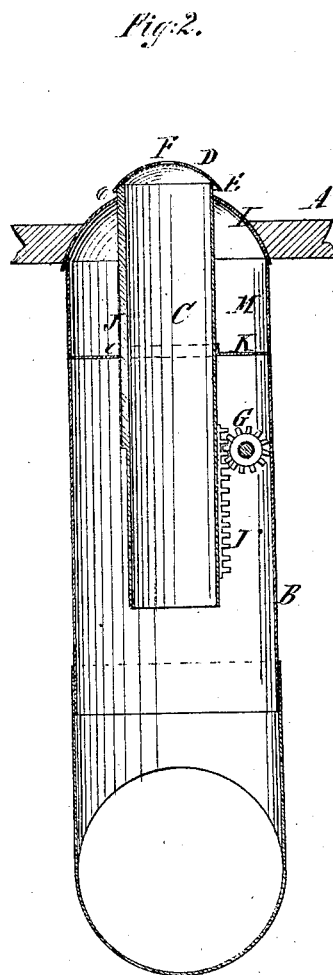
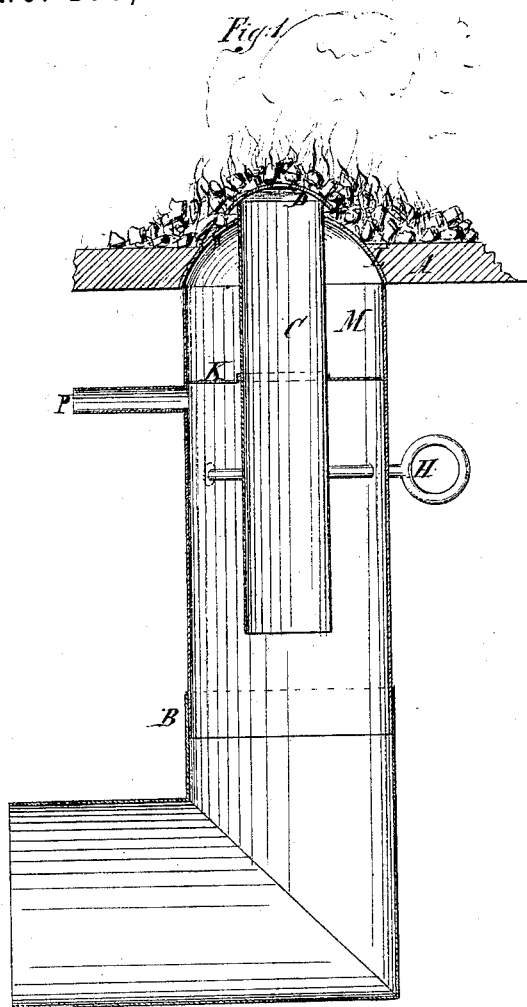


P. SWEENEY.

Tuyere.

No. 108,205.

Patented Oct. 11, 1870.



Witnesses.
E. Winkler
C. F. Kastenhuber

Inventor:
Peter Sweeney
By *Van Santvoort & Ha*
His Att

United States Patent Office.

PETER SWEENEY, OF NEW YORK, N. Y.

Letters Patent No. 108,205, dated October 11, 1870.

IMPROVEMENT IN ADJUSTABLE 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, PETER SWEENEY, of the city, county, and State of New York, have invented a new and useful Improvement in Adjustable Tuyeres; and I do hereby declare the following to be a full, clear, and exact description thereof, which will enable those skilled in the art to make and use the same, reference being had to the accompanying drawing forming part of this specification, in which drawing—

Figure 1 is a vertical section through the hearth and tuyere.

Figure 2 is also a vertical section of the same parts, but taken at right angles to fig. 1.

Similar letters indicate corresponding parts.

This invention relates to tuyeres for forges, and consists in a movable nozzle, arranged and combined with the tuyere and the hearth in such a manner that, by moving the nozzle out or in, more or less, the extent or size of the fire is proportionally lessened or increased, and I am able thereby to regulate the size of the fire according to the work in hand.

The letter A designates the hearth of the forge, through which projects the rounded end of the stationary tuyere-pipe B.

In the tuyere-pipe B is arranged the movable pipe C, whose rounded end D constitutes a nozzle, which projects through the end of the tuyere-pipe B, and is prevented from being drawn back entirely through the end of pipe B by the flange E, which overlaps the edge of the perforation in the end of said tuyere-pipe.

The nozzle D has a perforation, F, one or more, through which air is forced into the fire.

The nozzle-pipe C is moved in and out by means of a pinion, G, operated by a handle and shaft, H, extending through the sides of the main tuyere-pipe, said pinion working in a rack, I, which is secured or formed on the exterior of the said pipe C.

The said movable nozzle-pipe C is guided in the main pipe by means of the transverse partition, K, which is arranged across the inside of the main pipe, and by the rounded head L of the main pipe B, said partition K and head L being provided with openings, through which the pipe C moves, and it is kept in the same path, and prevented from turning by means of a rib, J, formed on the exterior of the pipe C, and corresponding notches, O, formed both in the edges of said partition K and head L.

The inner movable tube C is adjusted at the height or position required, so as to make the fire on the

hearth A of greater or lesser extent, and it is locked, after its adjustments, by any convenient means, as, for example, by locking the shaft or handle of the pinion G.

When the inner tube C is at its lowest position, its flange E resting on the head of the main pipe, the fire on the hearth will be of the widest or largest extent, but when it is desired to diminish the extent of the fire, and to save the consumption of fuel, and to make light work, the inner tube C is raised more or less toward the top of the layers or mass of fuel, so as to cause the blast to act on a smaller part of the mass of fuel, saving the fuel below the top of the nozzle D from the effects of the blast.

The partition K, which is arranged above the blast-pipe P, not only holds and guides the inner tube C, but also forms, in combination with the head L, an annular packing-chamber, M, around the inner tube C, for receiving packing material, in order to close the joints and prevent the escape of air through any part, except directly through the perforation in the head or nozzle D.

This packing-chamber may be filled with earth, which is introduced through the aperture N in the head L of the main tube. The packing material can be also arranged over the head L, and around that part of the tube C which projects through it, so as to secure additional tightness of the joint.

I do not confine myself to the particular details herein set forth, as my invention can be carried out in other ways, without departing from the principle of my invention, which consists in bringing the discharge-nozzle of the tuyere to the surface of the fuel in proportion as the extent of the fire is to be lessened.

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

1. The adjustable discharge-pipe C, in combination with the pipe B and the hearth A, substantially as described.

2. The adjustable pipe C, in combination with the packing-chamber M, pipe B, and hearth A, substantially as described.

This specification signed by me this 24th day of February, 1870.

PETER SWEENEY.

Witnesses:

W. HAUFF,
E. F. KASTENHUBER.