

J. McPHERSON.  
Soldering Furnace.

No. 100,174.

Patented Feb. 22, 1870.

Fig. 1.

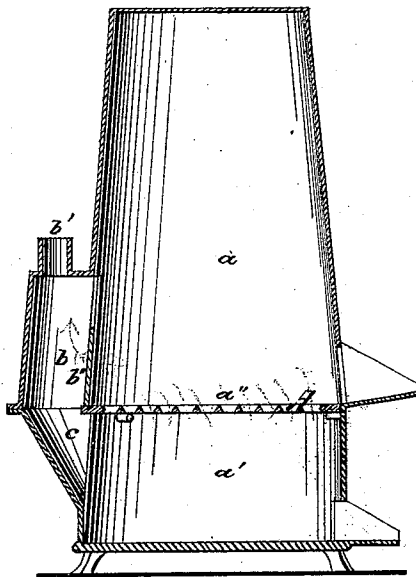


Fig. 3.

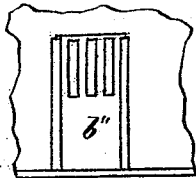
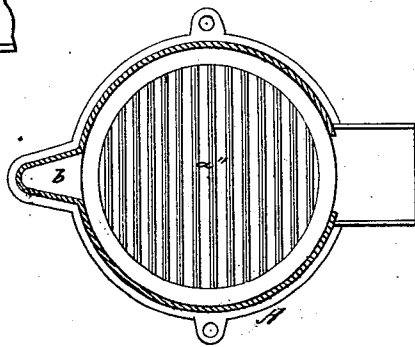


Fig. 2.



Witnesses:

Wm. Hagmann  
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Inventor:

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per *[Signature]*  
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# United States Patent Office.

JOHN MCPHERSON, OF BALTIMORE, MARYLAND.

Letters Patent No. 100,174, dated February 22, 1870.

## IMPROVEMENT IN SOLDERING-FURNACE.

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, JOHN MCPHERSON, of the city and county of Baltimore, and State of Maryland, have invented a new and improved Soldering-Furnace; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings making a part of this specification, in which—

Figure 1 is a sectional elevation;

Figure 2, a horizontal section at the grate *a'*; and

Figure 3, a detached elevation of the reversible grate *b'*.

This invention relates to that class of furnaces used by tanners and other artificers, to heat their soldering-irons.

The invention has for its object to economize fuel, by locating the draught-pipe in the lower part of the furnace, and by making use of a reversible grate placed over the inner orifice of the draught-pipe, which causes the fire to burn higher or lower, according as the draught-opening in the grate is placed up or down, and to make the furnace self-cleaning, by providing a chamber beneath the draught-pipe into which cinders and ashes may fall.

In the drawings—

*A* is the furnace, made in two sections, *a a'*, one sitting upon and suitably secured to the other.

A grate, *a''*, is placed at the top of the lower section.

In the front side and lower part of the upper section *a* is placed a projecting chamber, *b*, in the top of which is the pipe-hole *b'*, for carrying off smoke and gases. The chamber *b* opens into the furnace *a*, and forms the draught-opening of the latter. As the fire in the furnace burns no higher than the draught-opening, by placing such opening at the bottom of the furnace the latter is made base-burning, and that part of the fuel above the draught remains unignited, whereas in the ordinary soldering-furnace, the draught being at the top, the whole mass of coal becomes ignited at

once. Hence, I effect a considerable saving in fuel by placing the draught-opening at the bottom of the furnace.

In order still further to control the fire, I provide a grate, *b''*, for the separation of the furnace *a* from the draught-chamber *b*, one-half of which grate, more or less, is made solid, while the other half has the usual interstices. The grate is reversible, and by placing the open part downward the fire is made to burn close to the bottom of the furnace *a*, while if the open part be placed upward, the fire burns as high as the openings, and more coal is ignited and more heat produced.

In the front side and upper part of the lower section *a'* of the furnace, and immediately beneath the chamber *b* is a similar projecting chamber, *c*, whose office it is to conduct ashes and cinders accumulated in the chamber *b*, and dislodged by the soldering-iron when thrust among them beneath the grate *a''*, into the lower section *a'*, whence they may be easily removed. Where no such discharging-chamber is provided, the chamber is very liable to become filled up and the draught obstructed.

Having thus described my invention,

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

1. The draught-chamber *b*, when placed in the lower part of the furnace *a*, so as to render the latter base-burning, substantially as described.

2. The reversible grate *b''*, constructed and operating substantially as and for the purpose set forth.

3. In combination with the draught-chamber *b*, the discharge-chamber *c*, constructed and operating as specified.

To the above specification of my invention I have signed my hand this 20th day of December, 1869.

JOHN MCPHERSON.

Witnesses:

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