

J. K. McLANAHAN.

Improvement in Hot-Blast Oven-Pipes.

No. 129,744.

Patented July 23, 1872.

Fig. 1.

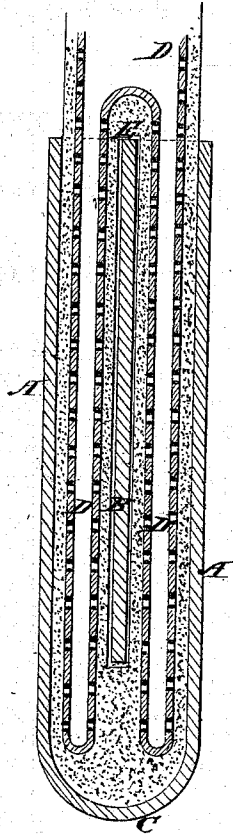
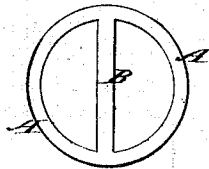


Fig. 2.



Witnesses:

P. C. Dieterich.

N. A. Graham.

Inventor:

J. K. McLanahan.

PER

Attorneys.

UNITED STATES PATENT OFFICE.

J. KING McLANAHAN, OF HOLLIDAYSBURG, PENNSYLVANIA.

IMPROVEMENT IN HOT-BLAST-OVEN PIPES.

Specification forming part of Letters Patent No. 129,744, dated July 23, 1872.

Specification describing a new and useful Improvement in Diaphragm-Pipes for Heaters, invented by J. KING McLANAHAN, of Hollidaysburg, in the county of Blair and State of Pennsylvania.

My invention consists in casting the upper ends of the diaphragm-pipes used in hot-air ovens for blast-furnaces together with the other part of said pipes to form a solid and permanent top, and dispense with the plugs cemented in the open ends of the pipes, as heretofore made, which often burn out and fail, so that it becomes necessary to cool down the blast-furnace, which is very expensive and often injurious to the hearth and bosh. The said pipes have heretofore been cast with open ends at the top for the escape of the gases through the core, and because the core can be more readily drawn out that way; but I now propose to cast the said pieces bottom end up to afford the same chance for the escape of the gas, and yet cast the ends to be used uppermost solid, for which I have devised a core adapted for casting the pipes in this way and forming the opening in the upper end of the diaphragm, and yet so that, by detaching some of the sand at the lower end, it can be drawn out.

Figure 1 in the drawing is a sectional elevation of one of these diaphragm-pipes in the position in which I propose to cast it; also a section of a core that may be used. Fig. 2 is a top view of the pipe as represented in Fig. 1.

Similar letters of reference indicate corresponding parts.

A is the said pipe; B, the diaphragm; and C, the top, which latter I propose to cast solid with the other part, as clearly shown in the drawing, for which I use a bifurcated perforated tube, D, for a core-bar on which to pack the sand, as shown, and I make a long slot, E, in the sand of the core, as shown, for the mold for the diaphragm B, which said slot will terminate near the lower end, as far therefrom as the required length of the opening above the top of said diaphragm and the top C of the pipe. This part of the core directly below the slot for the diaphragm, being of sand only, will break off readily when the core is to be drawn out; but I do not limit myself to the form of the core here shown, nor to any particular core, my object being to cast the tops of these diaphragm-pipes on solid in any way.

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

The diaphragm air-heating pipes for air-heating ovens of blast-furnaces, with the tops cast on solid with the sides or cylindrical parts, as a new manufacture, substantially as specified.

J. KING McLANAHAN.

Witnesses:

W. W. JACKSON,
JOSIAH A. BORDER.