

W. LEIGHTON, Jr.
Glass-Furnace.

No. 208,527.

Patented Oct. 1, 1878.

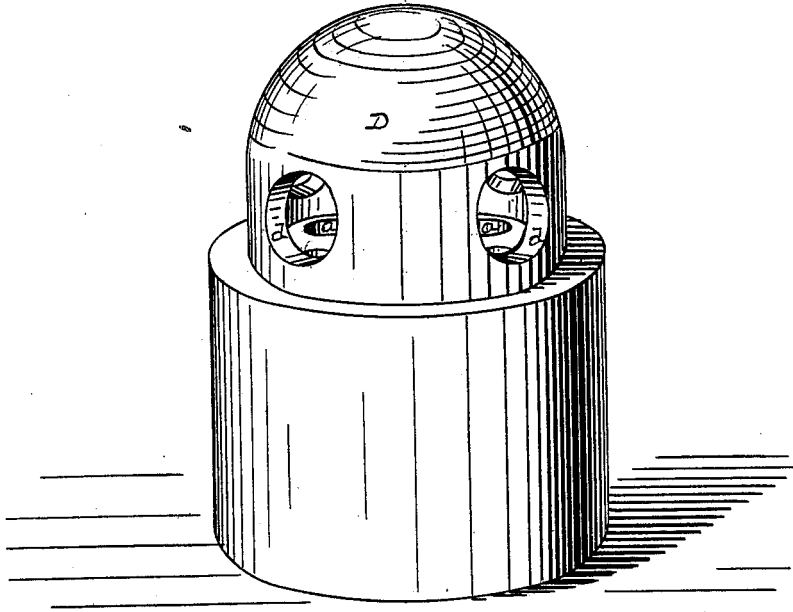


Fig. 1.

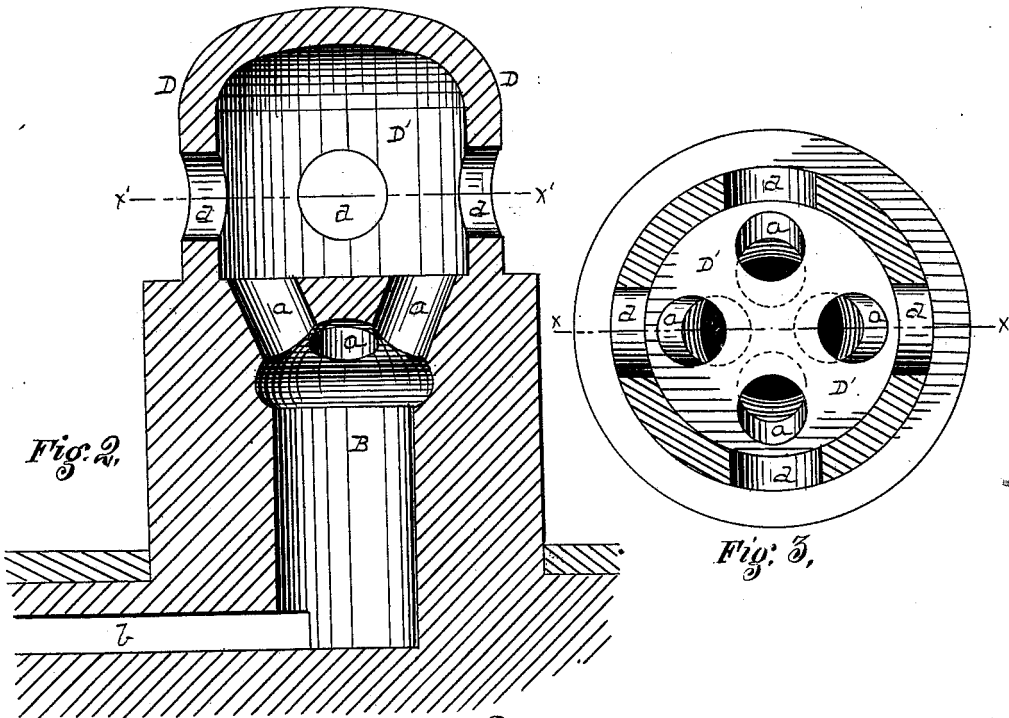


Fig. 2.

Fig. 3.

Witnesses

Geo. M. Christy
Claudius Parker

Inventor William Leighton Jr.
By Attorney George A. Christy

UNITED STATES PATENT OFFICE.

WILLIAM LEIGHTON, JR., OF WHEELING, WEST VIRGINIA.

IMPROVEMENT IN GLASS-FURNACES.

Specification forming part of Letters Patent No. **208,527**, dated October 1, 1878; application filed April 16, 1878.

To all whom it may concern:

Be it known that I, WILLIAM LEIGHTON, Jr., of Wheeling, county of Ohio, State of West Virginia, have invented or discovered a new and useful Improvement in Glass-Furnaces; and I do hereby declare the following to be a full, clear, concise, and exact description thereof, reference being had to the accompanying drawings, making a part of this specification, in which like letters indicate like parts.

Figure 1 is a view, in perspective, of the arch of my improved furnace, and showing the substructure thereof, of suitable construction for the use of benzine, oil, or gas as a heating agent. Fig. 2 shows the same in a vertical section in the line *xx* of Fig. 3, and Fig. 3 is a horizontal section in the line *x'x'* of Fig. 2.

My improved furnace, while useful for other purposes, is particularly designed for use as a glass-reheating furnace, in which articles of glassware are reheated in fire-polishing, or as a preparatory step to further work in finishing.

The arch or dome is represented at D. It does not vary materially in construction from other arches or domes in use.

The working-holes through which articles of glassware are inserted for reheating are represented at *d*.

The usual mode of introducing heat into such furnaces has heretofore been by means of a central throat or flue opening from the fire-pot or combustion-chamber below into the heating chamber or space immediately beneath the crown of the arch. In such construction the hottest part of the heating-chamber is at the center and most remote from the opening *d*, where the articles are introduced to be heated, or at or near which heat is to be applied for useful purposes.

In my improvement I make two or more openings. Such throats or openings, instead of entering the heating-chamber at or near the center, diverge outwardly from the combustion-chamber or furnace below, so as to enter the heating-chamber at or near its outer edge, and in convenient proximity to the working-

holes *d*, and there is preferably one such throat or flue opening to each working-hole.

The construction shown in the drawings is particularly designed for use in the combustion of benzine, oil, or gases generated or produced by other agencies or apparatus, and introduced by the flue *b* into the combustion-chamber B, from which, being ignited, it passes by flues *a* into the heating-chamber D'. These flues *a* are two or more in number, and they diverge outwardly somewhat, if necessary, so as to open into the heating-chamber at or near the outer edge of the chamber, and in such proximity to the working-holes *d* that the heat thus introduced into the chamber D' shall give its best effect at or near this point.

The number of such throats or flues may be varied at pleasure, according to the number of working or glory holes *d* made in the arch. In fact, two such flues or throats, *a*, may be made to each hole *d*, each opening into the heating-chamber a little to one side of the center of the vertical plane of its hole *d*; and this latter modification of this furnace may be adapted for use with fire-pots for making or melting glass, the distance between the throat-openings being such as to permit the insertion of the pot between them and opposite each hole *d*; or the arrangement of fire-throats may be varied in such manner as will best serve the purpose of the furnace, provided no substantial departure be made as to the material elements involved.

The same improvement may be applied to like furnaces where the heat is produced directly from the fire made on a grate, the grate and the combustion-chamber and the cave beneath them taking the place of the combustion-chamber B shown in the drawing. Other parts of the furnace are made in any ordinary or desired manner, and the products of combustion are carried off in the usual way.

I thus direct the heat to points where it can be made most effective, and enable the workman to do better work with less expenditure of heat, and consequently use a less amount of fuel.

I claim herein as my invention—

In a glass reheating or melting furnace, a

central combustion-chamber with a line of draft therefrom through and in combination with two or more conduit-flues, which conduct the heat from such combustion-chamber to points at or near the outer edge of the heating or melting chamber, and in immediate proximity to the working or glory holes, substantially as and for the purposes set forth.

In testimony whereof I have hereunto set my hand.

WILLIAM LEIGHTON, JR.

Witnesses:

CHAS. N. BRADY,
JOHN HEINLIN.