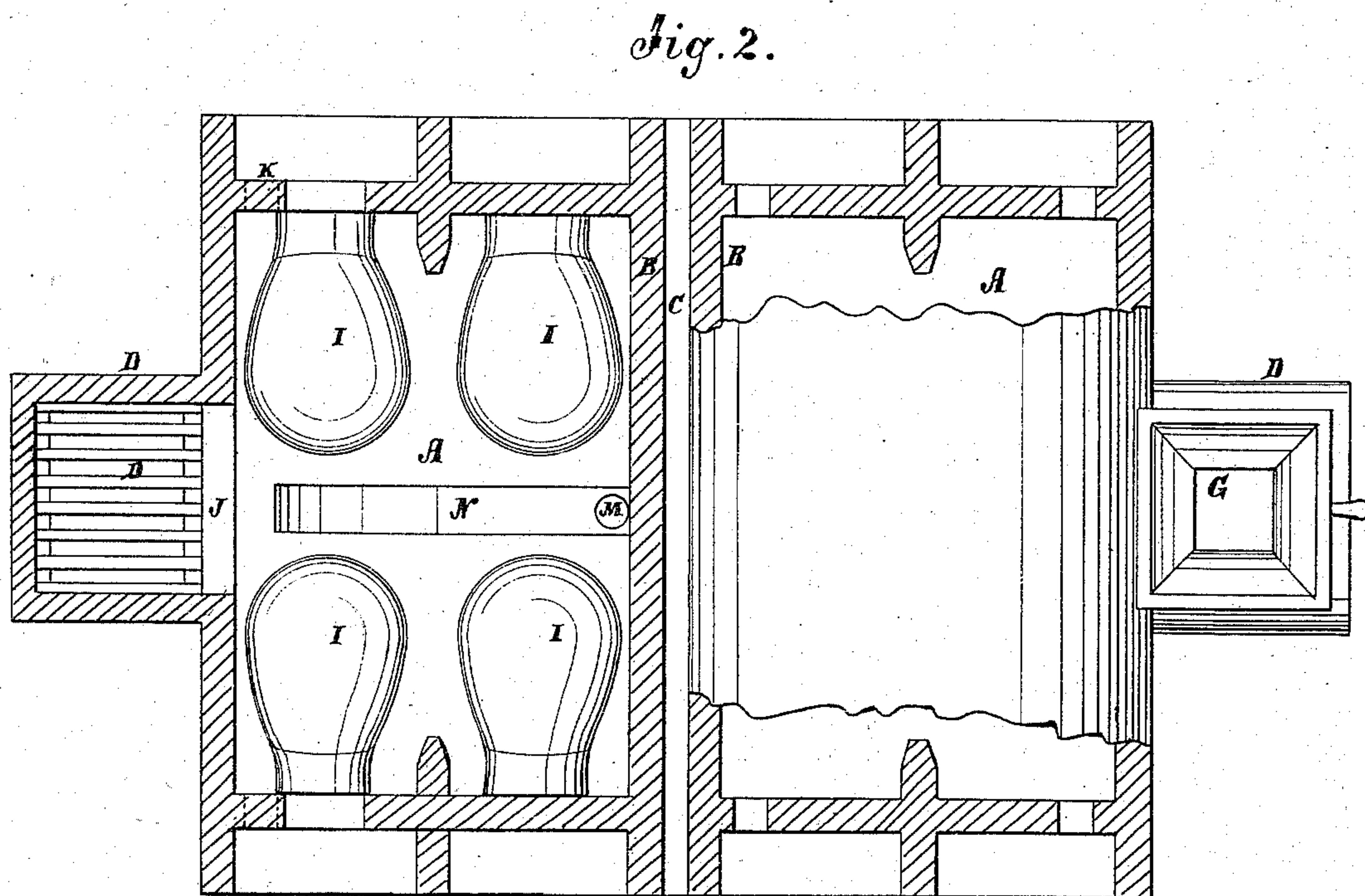
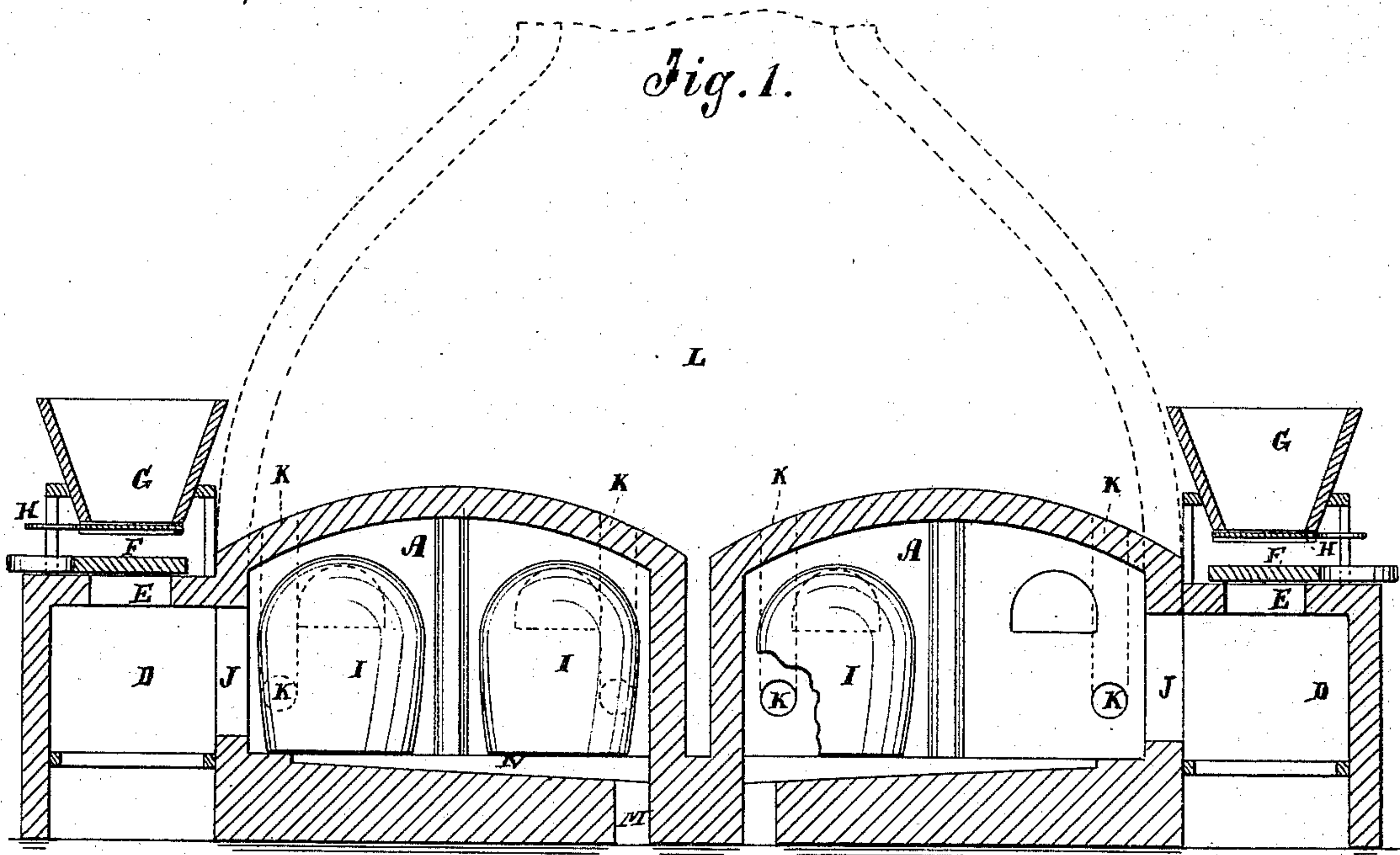


S. RICHARDSON.
Glass-Furnaces.

No. 156,743.

Patented Nov. 10, 1874.



WITNESSES:

A. Benneken Prof.
A. H. Terry

INVENTOR:

S. Richardson
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ATTORNEYS.

UNITED STATES PATENT OFFICE.

SAMUEL RICHARDSON, OF BROOKLYN, NEW YORK.

IMPROVEMENT IN GLASS-FURNACES.

Specification forming part of Letters Patent No. **156,743**, dated November 10, 1874; application filed September 5, 1874.

To all whom it may concern:

Be it known that I, SAMUEL RICHARDSON, of Brooklyn, in the county of Kings and State of New York, have invented a new and Improved Glass-Furnace, of which the following is a specification:

The invention will first be fully described, and then pointed out in the claims.

Figure 1 is a sectional elevation of my improved furnace, and Fig. 2 is partly a horizontal section and partly a plan view.

Similar letters of reference indicate corresponding parts.

A represents the two compartments or ovens of a double glass-melting furnace, which I propose to make in a single stack or chimney by separating the ordinary furnace with a double partition, B, with an air-space, C, for keeping one side cool while the other is hot. D represents a furnace outside of each compartment for burning the fuel and discharging the heat in through the side. It has an opening, E, through the top, covered by a slide, F, to admit the fuel, and over the opening a charging-hopper, G, from which the fuel may be let into the furnace at any time merely by drawing out the slide H. The air for the support of combustion will be admitted to the furnace from the pit below the same, as in the old arrangement. I represents the glass-melting pots in the ovens A, into which the heat passes through the opening J, and from which the smoke escapes, through passages K, to the stack or chimney L. M represents the passage through the floor of the oven to a pit below, for receiving the glass which escapes from the pots. N is the passage in the floor leading to the pit.

It will be seen that by this arrangement of the furnaces they can be readily and quickly fed by a boy, whereas the old way in which the fuel is supplied through a channel in the

floor to the middle of the oven requires a man of great physical strength, who must have long experience to do it successfully, and at best it requires from twenty to thirty minutes, during which time cold air rushes in at the open doors and chills the fires greatly.

By having the fire-place on the outside it can be repaired or rebuilt at any time in a few hours without injury to the oven or main furnace, whereas by the old arrangement the whole furnace had to be blown or let out, and all the pots destroyed, at great loss of labor, material, and time, the time being generally from four to six weeks.

The main furnace can be contracted about one-fourth in size with the fire-place outside, and at the same time hold the same number of pots, by which the first cost will be less, and it will not require so much fuel to do the same work.

By making the furnace double it enables the temperature in one part to be lowered greatly for tempering the melted glass suitably for working properly, while a higher heat is maintained in the other for melting the glass, thus enabling the melting to be carried on in one part while the working of the glass is going on in the other part, which is often very desirable.

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

1. The double furnace A, separated by a partition, B B, and having intermediate air-space C, as and for the purpose described.

2. A furnace-floor provided with the passages M N, leading to a subjacent pit, as and for the purpose specified.

SAMUEL RICHARDSON.

Witnesses:

A. P. THAYER,
ALEX. F. ROBERTS.