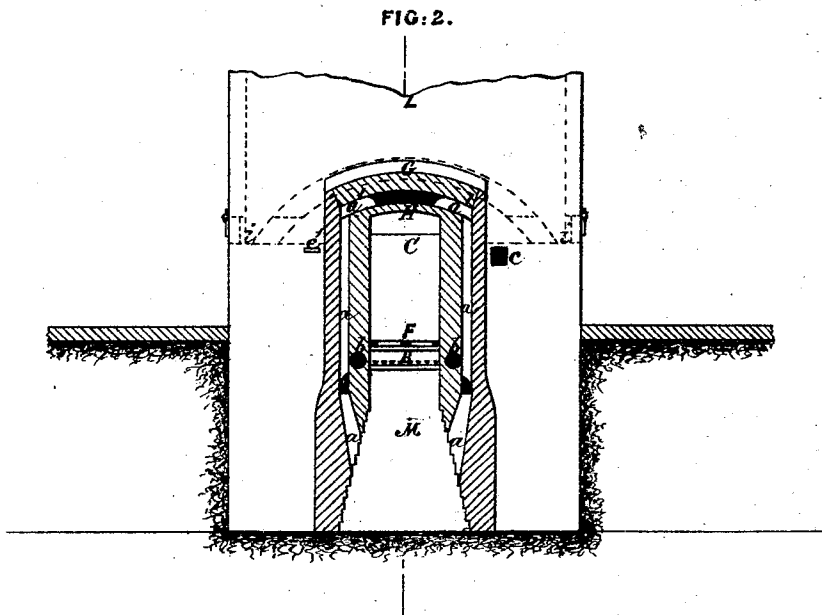
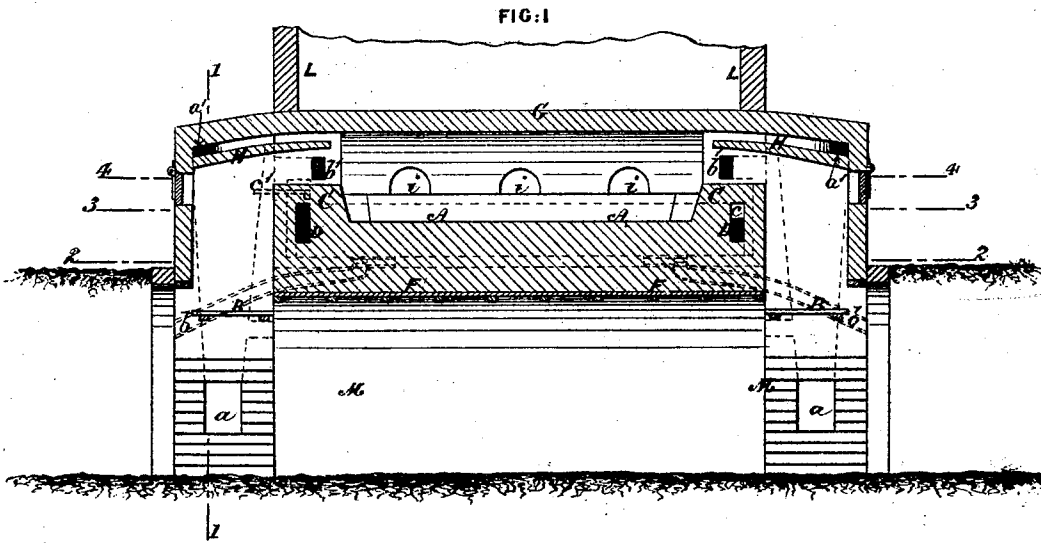


3 Sheets--Sheet 1.

A. POCHERON.
Glass-Furnaces.

No. 141,666.

Patented August 12, 1873.



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A. Pocheron

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FIG. 3.

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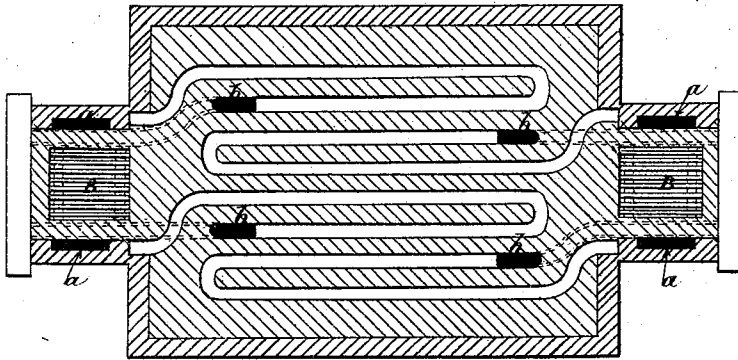


FIG. 4.

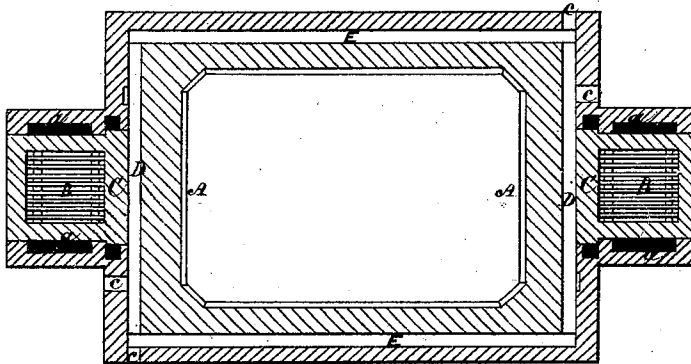
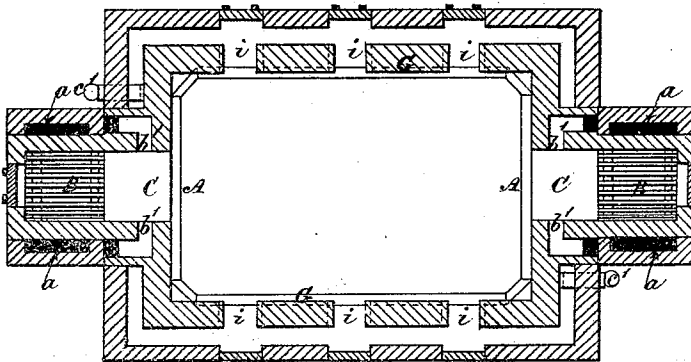


FIG. 5.



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FIG: 6.

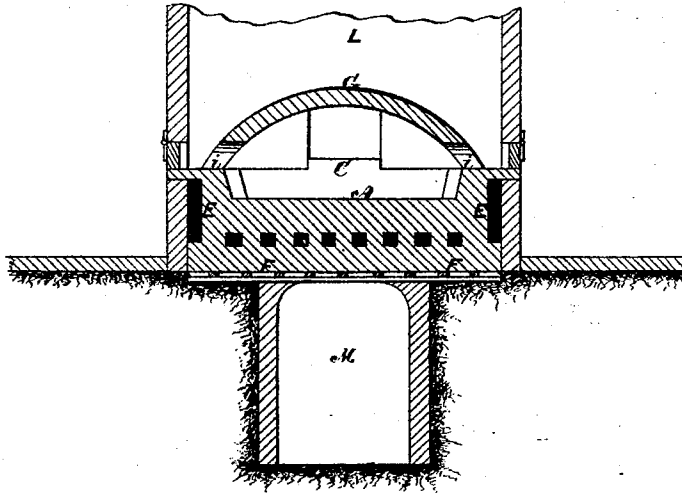
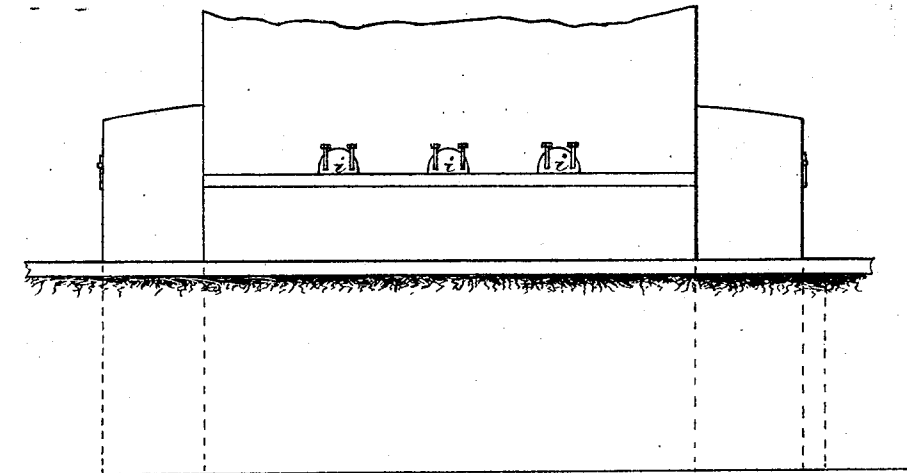


FIG: 7.



*Alfred De
Tracy*

A. Pocheron

UNITED STATES PATENT OFFICE.

ANTOINE POCHERON, OF PARIS, FRANCE, ASSIGNOR TO EDWIN CANNINGTON.

IMPROVEMENT IN GLASS-FURNACES.

Specification forming part of Letters Patent No. **141,666**, dated August 12, 1873; application filed May 29, 1873.

To all whom it may concern:

Be it known that I, ANTOINE POCHERON, of No. 15 Passage des Petites Ecuries, Paris, a citizen of the French Republic, glass-manufacturer, have invented or discovered new and useful Improvements in the Manufacture of Glass; and I, the said ANTOINE POCHERON, do hereby declare the nature of the said invention and in what manner the same is to be performed to be particularly described and ascertained in and by the following statement thereof—that is to say:

My improvements relate to melting or fusing furnaces, such as are now used in glass-making, and have reference to the suppression of the fire-clay pots or crucibles hitherto in use, and to placing the materials to be fused or melted within the furnace itself, the usual inner form of the lower part of which is modified by doing away with the sieges or banks and the general leveling of the bottom, to which, separately, I make no claim; but according to my invention the sides are constructed of a hollow form in such wise that a current of refrigerating or cooling air may circulate and prevent any excessive heating of the sides which are to retain or inclose the materials in fusion.

My improvements will be thoroughly understood by reference to the accompanying sheets of drawings, which represent my improved furnace or kiln.

A indicates the basin or tank which is to contain the materials in fusion; B, fire-places; C, sills between the basin and the fire-places. These sills are made by the aid of two fire-brick walls, united at their summits so as to establish between them a vacant space, D, which is to serve for the current of refrigerating air. E, free space, passing all round the basin or tank between the exterior walls and the inner walls or sides of the basin, and communicating with the space D between the sills for the circulation of cold air; F, bottom of the basin, supported by iron-work; G, crown or arch of the furnace; H, arches over the fire-places B, which fire-places are substituted for the fire-grates usually employed in the body of the furnace, beneath the crown or arch G, where the tank A is now formed; *i*, working-holes; L, chimney; M, cave or tunnel from which air is admitted to the fires. *a a* are

passages admitting air to ascend from the cave between the double walls of the fire-places B. The air thus heated passes, by passages *a' a'* in the arches H, into the body of the furnace under the arch G, and, together with the products of combustion and air entering the furnace at other points, it escapes through the working-holes *i* into the chimney L.

Figure 1 is a longitudinal section of my improved furnace or kiln. The passages *a* are clearly seen in Fig. 2, which is a transverse section taken on the line 1 1 in Fig. 1. *b b* are other passages from the cave, which admit air to circulate in channels formed in the bed of the tank, as is seen at Fig. 3, which is a horizontal section taken on the line 2 2 in Fig. 1. The air thus heated issues at openings *b'*, and, meeting the gases entering the body of the furnace from the fire-places H, effects their perfect combustion. *c c* are passages, by which air from the glass-house in which the furnace stands is able to pass between the two walls of the sills C through the space D. These passages are clearly seen at Fig. 4, which is a horizontal section taken on the line 3 3 in Fig. 1. E E are air-channels in communication with the passages *c*, and completing the circuit around the furnace.

Fig. 5 is a horizontal section taken on the line 4 4 in Fig. 1. *c' c'* are dampers to regulate the quantity of air passing through the sills. By these dampers the temperature of the sills can be controlled, so as to prevent it becoming either too high or too low.

Fig. 6 is a transverse section taken through the center of the furnace, and Fig. 7 is a side elevation of the same.

By the method herein described and illustrated on the annexed drawings no pots or crucibles are used; consequently all expense in this respect is done away with. There is a considerable saving of fire-bricks in the construction of my new furnaces, no more deceptions in the calculations of the glass-maker, quicker fusions, more lengthened working, and no more disasters. In fact, all the defects of the old furnaces are removed and a saving of from fifty to sixty per cent. in fuel is effected.

Having thus described the nature of my said invention, and the manner of performing the same, I claim as my invention—

1. The combination, in glass-furnaces, of

the following parts, viz: The tank for holding the glass, the fire-places arranged externally to the said tank, the air-passages in the walls of the tank, the arch surmounting the tank, and perforated with working-holes, and the chimney inclosing the said arch and receiving the products of combustion from the working-holes, all substantially as before set forth.

2. The combination of the following parts, viz: The tank for holding the glass, the fire-places arranged externally to said tank, the

air-passages in the walls of the said fire-places, the internal arches of the said fire-places, the arch surmounting the said tank, and perforated with working-holes, and the chimney inclosing the said arch, all substantially as before set forth.

ANTOINE POCHERON.

Witnesses:

M. SAUMELLY,
P. GAUSSUY.