

(No Model.)

H. DULIÈRE.
GLASS MELTING FURNACE.

No. 376,029.

Patented Jan. 3, 1888.

Fig. 1.

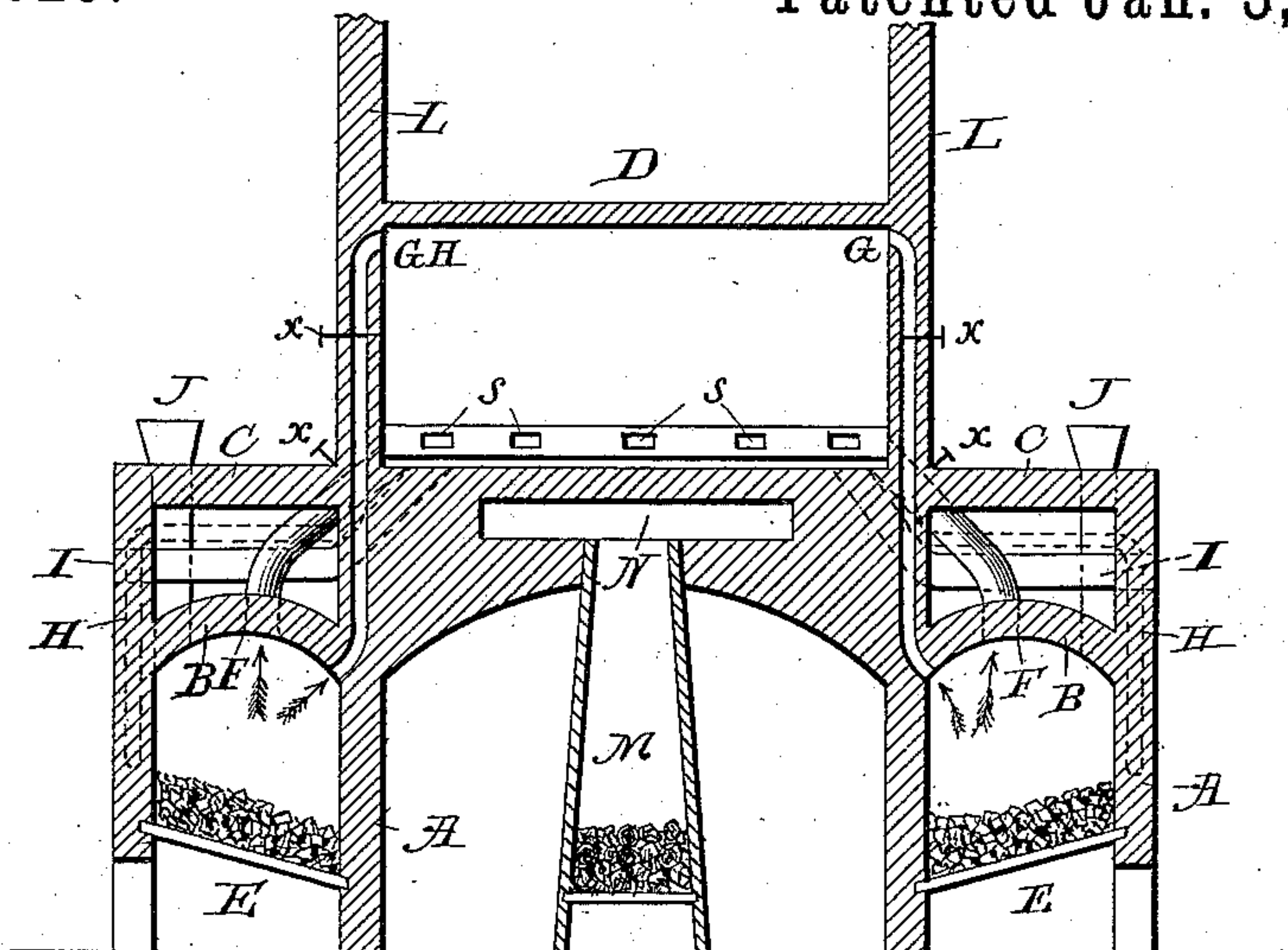


Fig. 2.

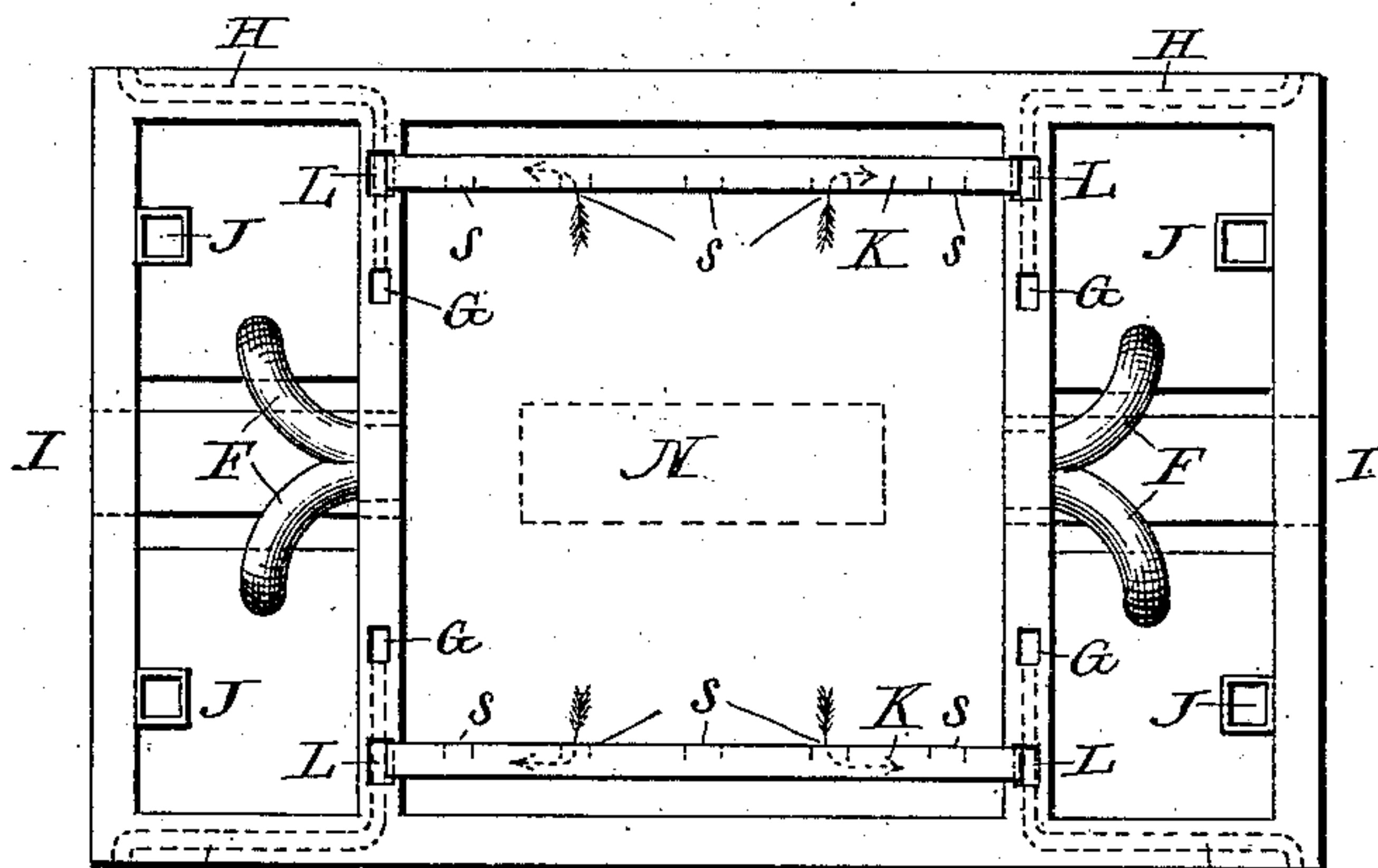
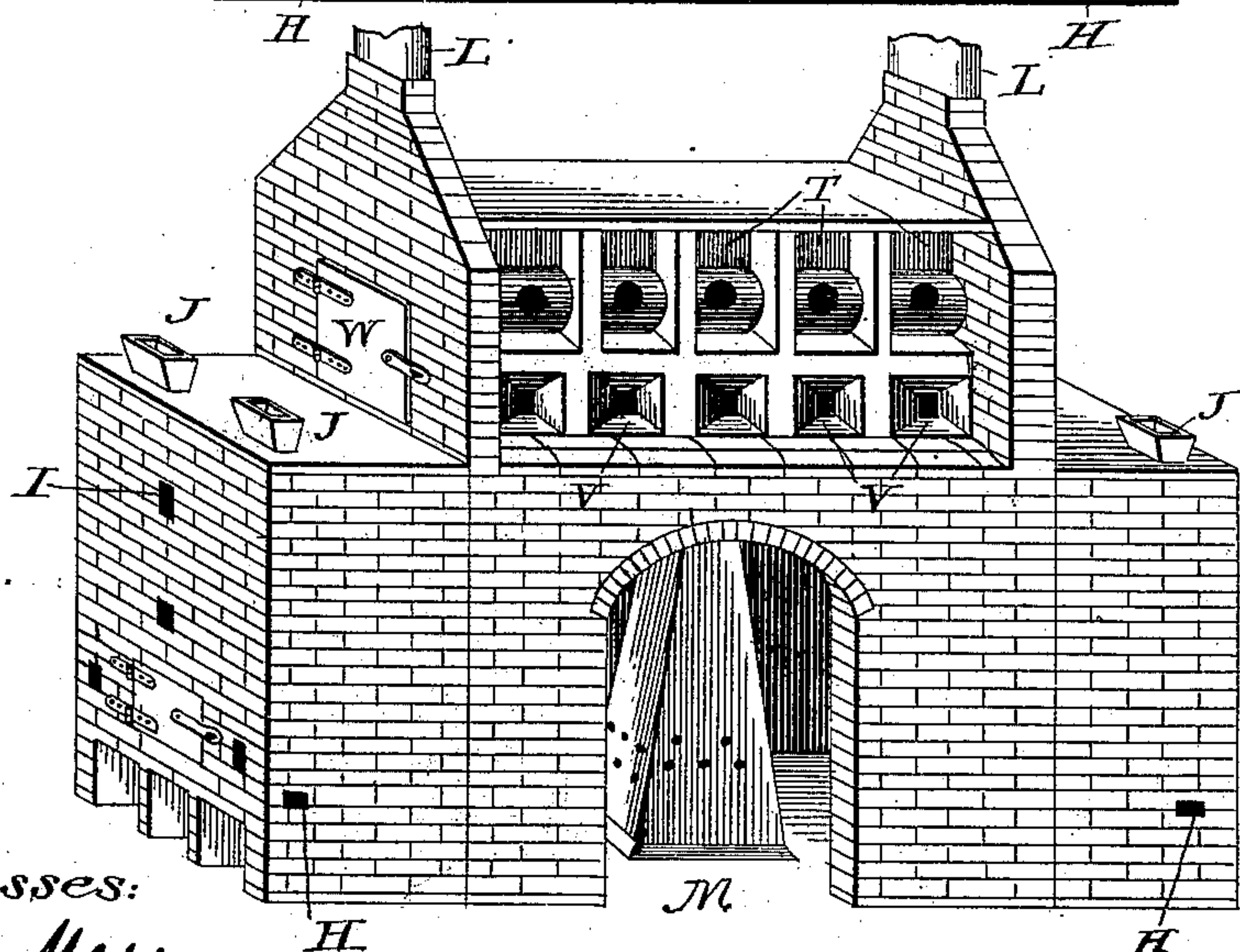


Fig. 3.



Witnesses:

Joseph Masson.
Fortune Dagneaux

Inventor.

Henry Dulière

UNITED STATES PATENT OFFICE.

HENRY DULIÈRE, OF MEADVILLE, PENNSYLVANIA, ASSIGNOR, BY DIRECT AND MESNE ASSIGNMENTS, OF TWO-THIRDS TO JOSEPH MASSON, OF SAME PLACE.

GLASS-MELTING FURNACE.

SPECIFICATION forming part of Letters Patent No. 376,029, dated January 3, 1888.

Application filed July 29, 1886. Serial No. 209,484. (No model.)

To all whom it may concern:

Be it known that I, HENRY DULIÈRE, a former subject of the King of Belgium, having resided for more than one year in the United States, and
5 having made oath of my intention of becoming a citizen of the United States, now residing in Meadville, in the county of Crawford and State of Pennsylvania, have invented an Improvement in Glass-Melting Furnaces, of which
10 the following is a specification.

My invention relates to that class of glass-melting furnaces where pots are arranged in rows on each side of the chamber, with a glory-hole to each pot and spaces between the rows
15 to withdraw or replace any pot when necessary.

The object of my invention is to convert the slack of coal into gas and carry it from the producers in a heated state to the melting-chamber, at the entrance of which, combined
20 with heated air, I effect a more perfect combustion, and by introducing the gas at different points of elevation at the ends of the chamber I obtain an equal distribution of flame, and
25 by discharging it near the floor I get the full benefit of the heat. I attain these objects by the structure illustrated in the accompanying drawings, in which—

Figure 1 is a vertical transverse section
30 near the middle. Fig. 2 is a horizontal section cut at a point just beneath the floor of the melting-chamber, as seen from above. Fig. 3 shows the furnace in perspective.

Similar letters refer to similar parts in the
35 several views.

I construct my furnace with four producers, two at each end, with a passage-way at each end between them, and the gas, as fast as generated, rises through the central flue, F, and the
40 side flues, G. F enters the melting-chamber centrally near the floor and is supplied with air for combustion through a duct, I, passing under F, through the heated chamber between the two ovens, and the flues G G lead from
45 the arch of the ovens, through the walls A A, up to the top of the chamber, where it is met by air-ducts H H, (shown by dotted lines, see arrows,) which air-ducts, entering the walls on the sides of the ovens, are continued round
50 through the walls of the chamber till the

heated air and the hot gas unite, (see G H, Fig. 1.) There are two jets, G G, and one jet, F, at each end of the chamber. The mains K K at each side of the chamber reach from wall to wall near the floor and have an opening at
55 each pot through which the draft is made into the chimney L, (see arrows s s, Fig. 2.) Centrally under the chamber I construct a coke-burner, M, whose heat is carried directly up to the long recess N, constructed in the floor
60 of the chamber to give additional heat when required.

The fuel to the gas ovens is supplied from the top, through J J, to the grate-bars E E.

B B are arches of gas producers.

The side elevation in perspective shows the glory-holes T T, the inspection-holes V V, to be closed with fire-clay plugs, and the door W for the introduction and removal of pots.

D is the top of chamber-arch.

There are slide-gates X X to each gas-tube, whether F or G, to regulate or shut off the flow, in easy reach from the outside.

When natural gas is used in this melting-chamber, I close up the ovens below and put a
75 tube in each oven and coke-burner M, and regulate its consumption precisely as I do the artificial gas.

N is a chamber made in the floor of the melting-chamber, so as to receive the products
80 of combustion from the coke-burner M. The heat is readily transmitted through the metallic floor to the space above, while the products of combustion, after parting with the larger part of the caloric, find their way to the smoke-
85 stack. By this arrangement of distributing the gas-openings into the melting-chamber from both top and bottom I get a more regular heat throughout, and by discharging the flame into the chimneys in the end walls I still fur-
90 ther economize heat.

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

1. In a glass-melting furnace, the combination, with the melting-chamber and produc-
95 ers, of the flues F, leading from the top of the arches of the combustion-chamber and entering the melting-chamber centrally near the floor, the side flues, G, leading from the combustion-chamber through the walls to the upper
100

part of the melting-chamber, and the air-ducts H I, carried through the walls and between the ovens to heat the air, as and for the purpose set forth.

- 5 2. In a glass-melting furnace, the combination of a melting-chamber, a hollow chambered metallic floor thereunder, and a centrally-ar-

ranged coke-burner opening into the chamber of said floor, as and for the purpose set forth.

HENRY DULIÈRE.

Witnesses:

JOSEPH MASSON,
FORTUNE DOGNEAUX.