

J. M. BROOKFIELD.
Glass-Furnace.

No. 200,973.

Patented March 5, 1878.

Fig. 1.

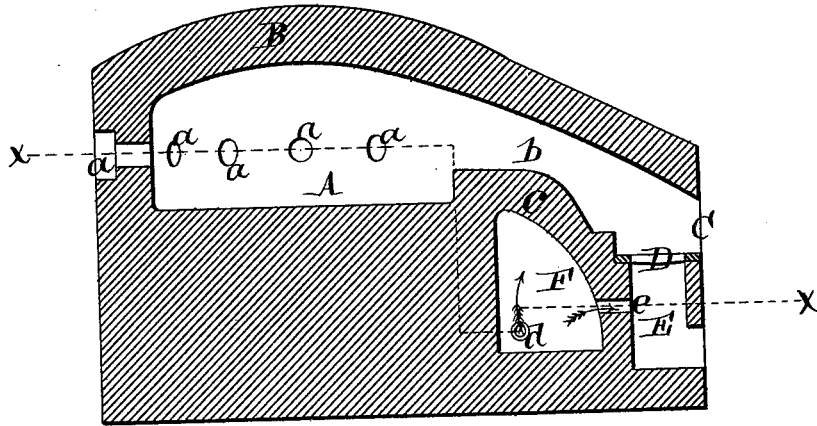
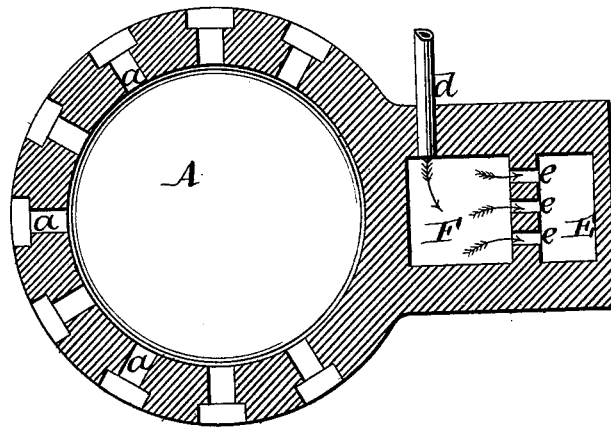


Fig. 2.



Witnesses.
Chas. Wahlers
Otto Stupeland.

Inventor.
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By
Van Santvoord & Hauff
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UNITED STATES PATENT OFFICE.

JAMES M. BROOKFIELD, OF BROOKLYN, NEW YORK.

IMPROVEMENT IN GLASS-FURNACES.

Specification forming part of Letters Patent No. **200,973**, dated March 5, 1878; application filed February 13, 1878.

To all whom it may concern:

Be it known that I, JAMES M. BROOKFIELD, of Brooklyn, in the county of Kings and State of New York, have invented a new and useful Improvement in Glass-Furnaces, which improvement is fully set forth in the following specification, reference being had to the accompanying drawing, in which—

Figure 1 represents a longitudinal vertical section of a furnace embracing my invention. Fig. 2 is a horizontal section thereof in the line *x x*, Fig. 1.

Similar letters indicate corresponding parts.

My invention is especially adapted to that class of furnaces having a tank to receive the substance to be fused or molten.

In this class of furnaces it is common to form an air-passage in the sill or partition between the fire-place and the tank, for the purpose of cooling the partition, and to introduce an air-blast through the ash-pit, also sometimes called the "wind-box," for the purpose of accelerating combustion, the air-passage being supplied with air or other cooling medium independently of the ash-pit.

The object of my invention is to permit of using a single blast of air in cooling the sill or partition and driving the fire.

To this end it consists in combining, with the aforesaid sill or partition and the ash-pit, a wind-box or chamber, which is formed beneath the sill or partition, and communicates with the ash-pit, so that if air is introduced to this wind-box or chamber it circulates through the same, and thence passes into the ash-pit.

In the drawing, the letter A designates the tank of my furnace, constructed with a plain bottom; and B is the roof of the tank, having a solid form. *a a* are working-holes, through which the raw material is introduced, gathered, &c., and which allow the products of combustion to escape. C is the fire-place, com-

municating with the tank by means of a passage, *b*. D is the grate, and E is the ash-pit or space beneath the grate. *c* is the sill or partition between the fire-place C and the tank, and which, in the example shown, is curved. Beneath this sill or partition *c* in the brick-work or other material of which my furnace is built, I form a closed box or chamber, F, which, in the example shown, is arranged to be connected with a fan-blower or other air-forcing device by means of a pipe, *d*, and communicates with the ash-pit E through holes *e* formed in the wall, by which said box or chamber and the ash-pit are divided from each other.

The air supplied to the box or chamber F circulates through the chamber, so as to effectually cool the sill or partition *c*, and then passes into the ash-pit E through the holes *e*. The durability of the furnace is thus increased, with a great reduction in the expense and trouble attending the attainment of the like object in the old class of tank-furnaces.

Instead of connecting the chamber F with a fan-blower, atmospheric air may be allowed to enter the same by its own pressure; and it is obvious that I can also use steam instead of air.

I claim as new and desire to secure by Letters Patent—

In a glass-furnace, the combination of the wind-box F, arranged in the rear of the ash-pit, and communicating therewith through the passage *e*, and the pipe *d*, projecting outward from said wind-box, substantially as and for the purpose set forth.

In testimony that I claim the foregoing I have hereunto set my hand and seal this 8th day of February, 1878.

JAMES M. BROOKFIELD. [L. S.]

Witnesses:

CHAS. WAHLERS,
D. W. BROOKFIELD.