

S. M. Laughlin,

Puddling Furnace.

No. 100,308.

Patented Mar. 1. 1870.

Fig. 1.

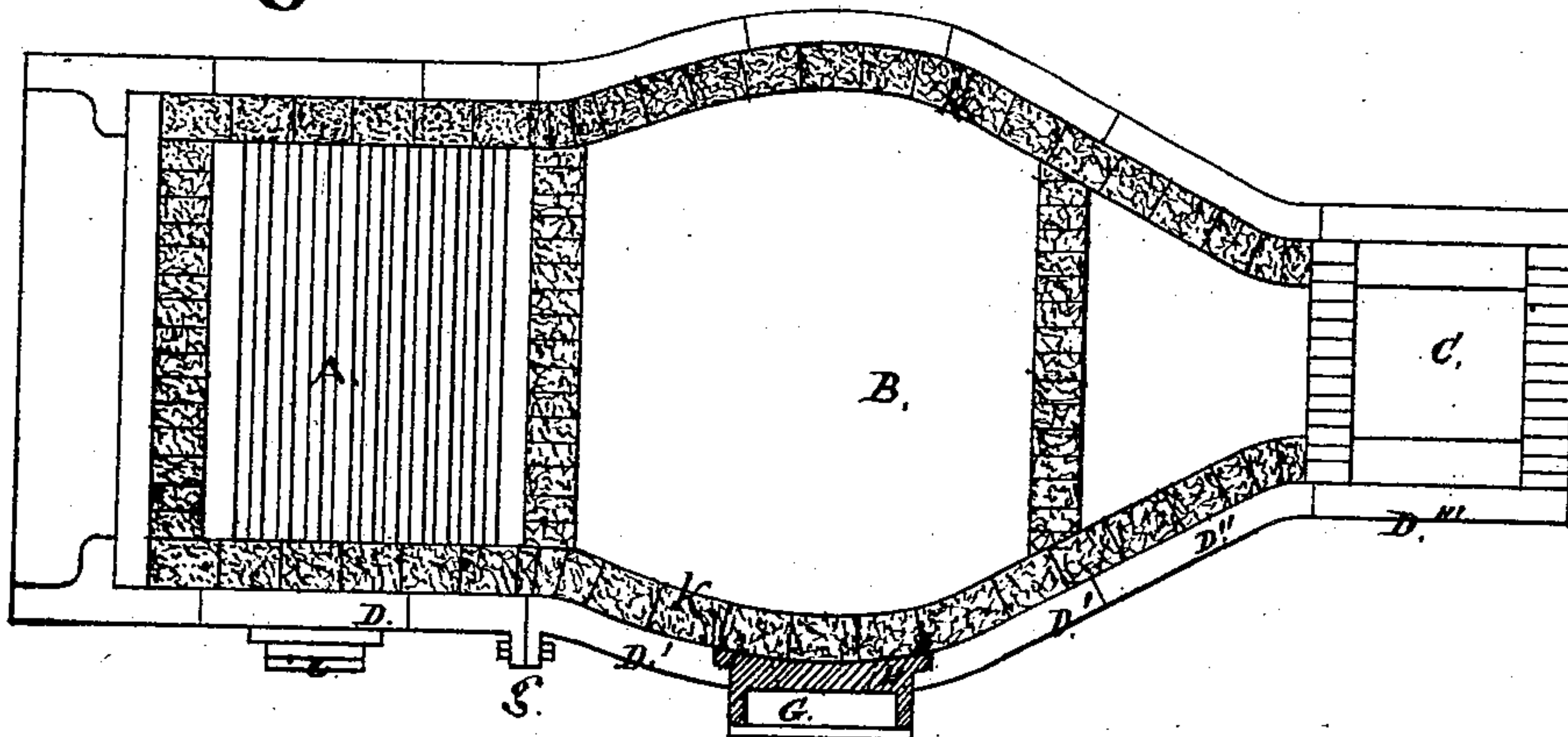
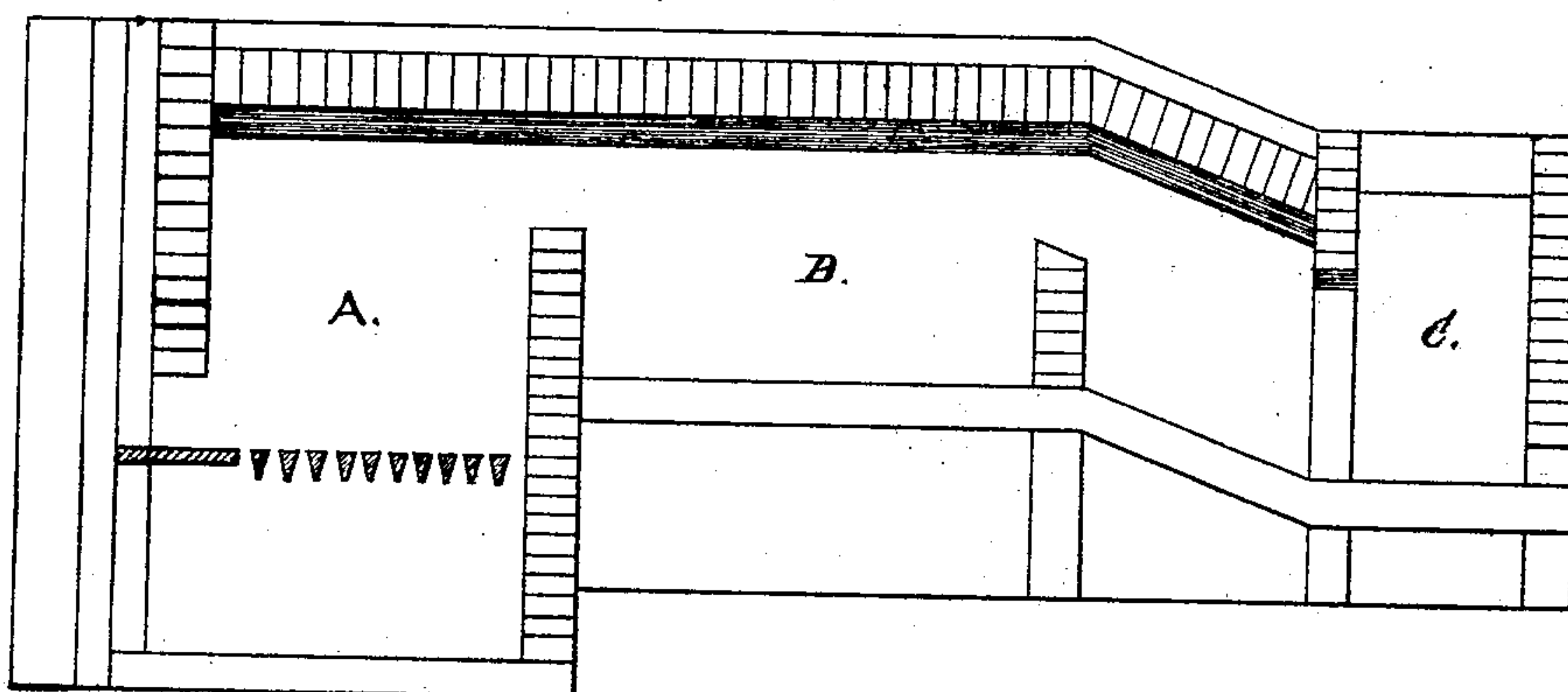


Fig. 2.



Witnesses { *Edw. Brown*
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SAMUEL McLAUGHLIN, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR
TO HIMSELF AND BENJAMIN R. CASKEY, OF SAME PLACE.

Letters Patent No. 100,308, dated March 1, 1870.

IMPROVEMENT IN PUDDLING-FURNACES.

The Schedule referred to in these Letters Patent and making part of the same

I, SAMUEL McLAUGHLIN, of the city and county of Philadelphia, and State of Pennsylvania, have invented certain Improvements in the Construction of "Puddling-Furnaces," of which the following is a specification.

The nature of my invention consists in so shaping the exterior iron plates which inclose the furnace and hearth, that they conform to the shape of the hearth, and thereby make a great saving in the amount of fire-brick and material used in its construction, whereby also the lining of fire-brick can be made thicker and more durable on the jamb of the door; also in the manner of securing the door-frame to the said iron plates.

In the drawing accompanying this specification—

Figure 1 is a plan of my furnace.

Figure 2 is a longitudinal section.

The furnace with the grate-bars beneath is shown at A;

The hearth where the puddling is performed at B. C is the chimney.

The exterior of the furnace is made of cast-iron plates D D' D'' D''' bolted together by flanges and bolts, as shown at g.

Puddling-furnaces as now made have the plates D D' in one straight line, the size and shape of the fire-place and hearth being made by filling in with brick work. With straight sides the fire-brick has to be made about fourteen inches thick, and tapering up, and cut away to about two inches at the door-jamb H. This is so thin that the lining has to be renewed at the door-jamb every week.

By my improvement, as shown in fig. 1, the furnace will be seen as narrowing down at D to the actual size necessary for the grate-surface, after which the

plates D' swell outward, either by a curve or in angular lines, so as to conform to the shape of the hearth, which is usually of an elliptical form.

The interior side of the plates D D' are then lined with a course of fire-brick, which is brought up with an even thickness of about nine inches close to the door-frame H.

The plates D' gradually converge to the chimney, which is the narrowest part of the furnace.

The door-frame H is constructed with a flange, h, fitting against a corresponding flange in the plates D', so that the interior of the door-frame is flush with the interior of the cast-iron plates D', thus rendering it much less liable to be burned away, and the fire-brick much more easily fitted. This door-frame H is curved outward, as shown for a similar object.

By this mode of construction a uniform thickness of fire-brick, K, may be used both front and back of the hearth, costing less in construction, being more durable, and more economical in fuel.

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

1. The casing plates D' D', also the door-frame H, swelled or curved outward, so as to conform to the shape of the hearth, in the manner herein shown and described.

2. The door-frame H, rabbeted or flanged as shown, so as to bring the inside flush on a line with the inside of the casing plates D', substantially as described.

SAMUEL McLAUGHLIN.

Witnesses:

EDWD. BROWN,
JOSEPH RABY.