Sept. 16, 1924. 1,508,566

F. W. MOFFAT

PROCESS OF FORMING OVEN SIDE WALLS

Filed Jan. 19, 1924 2 Sheets-Sheet 1

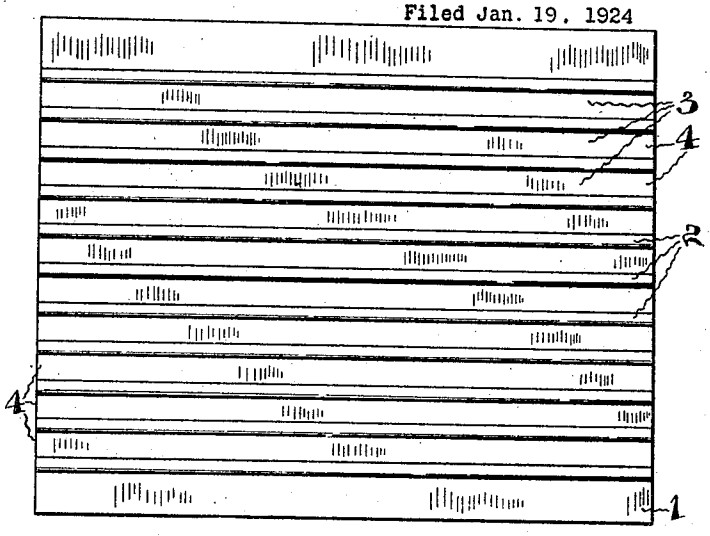


Fig. 1.

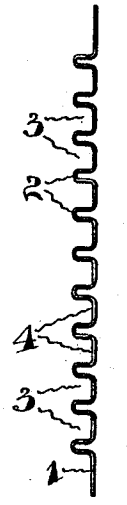


Fig. 2.

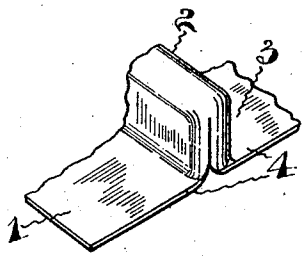


Fig. 3.

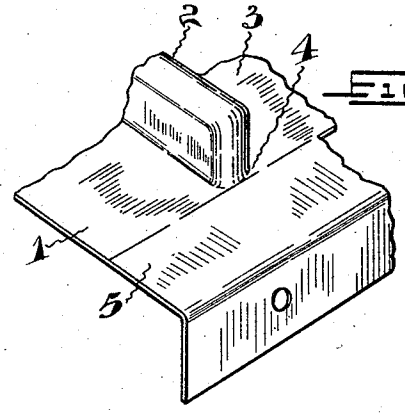


Fig. 4.

INVENTOR.
F. W. Moffat.
BY J. Edward Maybee.
ATTY.

Sept. 16, 1924. 1,508,566

F. W. MOFFAT

PROCESS OF FORMING OVEN SIDE WALLS

Filed Jan. 19, 1924 2 Sheets-Sheet 2

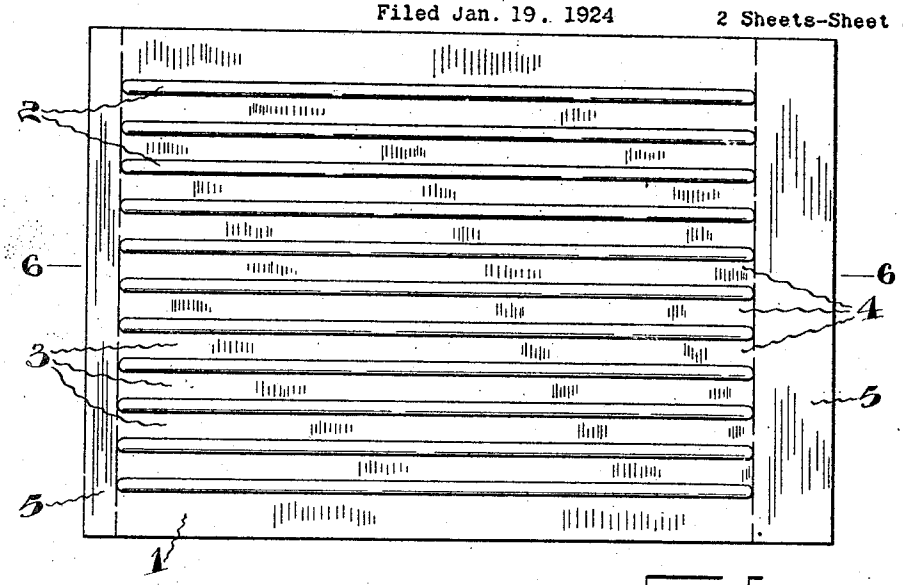


Fig. 5.

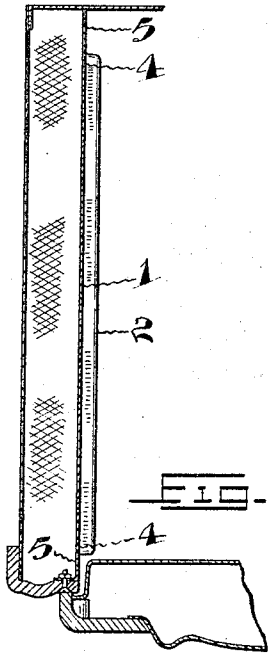


Fig. 6.

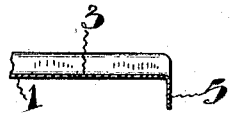


Fig. 7.

INVENTOR.
F. W. Moffat.
BY J. Edward Maybee.
ATTY

Patented Sept. 16, 1924. 1,508,566

UNITED STATES PATENT OFFICE.

FREDERICK W. MOFFAT, OF WESTON, ONTARIO, CANADA.

PROCESS OF FORMING OVEN SIDE WALLS.

Application filed January 19, 1924. Serial No. 687,230.

To all whom it may concern:

Be it known that I, FREDERICK W. MOFFAT, of the town of Weston, in the county of York, Province of Ontario, Canada, a subject of the King of Great Britain, have invented certain new and useful Improvements in a Process of Forming Oven Side Walls, of which the following is a specification.

It is common to provide ovens with sheet metal linings, and to provide the inner side walls or linings with ledges for the support of the oven racks and with end flanges by which it is secured in place. For various reasons the ordinary side walls and ledges are not entirely satisfactory, and my object is to provide a combined oven side wall and rack support which involves the use of a minimum of metal, which makes an oven which will heat faster, which is easily and perfectly enamelled on both sides, which will not warp in the process of enamelling or in use. I attain my object by constructing the parts as hereinafter described to produce a side in which substantially all the parts are formed of a single thickness of metal, in which the ledges are formed by hollow ribs open at the back, and in which the ribbed portion is bordered by plain margins.

The invention is illustrated in the accompanying drawings in which

Fig. 1 is a plan view illustrating the first step in the production of an oven side wall in accordance with my invention;

Fig. 2 an end elevation of the same;

Fig. 3 a perspective detail illustrating the method of closing the ends of the hollow ribs forming the ledges;

Fig. 4 a similar view showing a part of an end flange welded in place;

Fig. 5 a plan view of the completed oven side wall;

Fig. 6 a cross section of the same on the line 6—6 in Fig. 5 showing also part of the frame of the oven; and

Fig. 7 a sectional detail showing a modification of one of the end flanges.

In the drawings like numerals of reference indicate corresponding parts in the different figures.

In forming my improved oven wall I first take a rectangular sheet of suitable metal 1, such as mild steel, and crimp or corrugate it to form a series of hollow ribs 2 separated by grooves 3. These grooves are preferably as nearly rectangular as possible in cross section, and the ends 4 of their bottoms are substantially rectilinear and in alinement. Either simultaneously with the formation of a hollow rib, or as an after step, its ends are closed by folding them inwardly as seen particularly in Figs. 3 and 4 so as to effect a substantially complete closure thereof. By "substantially complete" it is to be understood that no gaps or openings are left which will not be effectively sealed by the application of the protective coating hereinafter referred to.

The next step in the construction of the wall is the application of the flanges 5 and their welding to the ends 4 of the bottoms of the grooves.

While the precise method of welding is immaterial, it is preferable to butt weld the flanges with or without the application of extraneous welding metal. In this way, a substantially flush joint is obtained and the finished wall presents substantially the appearance of having been made from a single sheet with the ribs 2 pressed out therefrom.

The flanges 5 will be variously shaped according to the form of the oven with which the wall is used. It is shown in Figs. 4, 5 and 6 that one flange lies entirely in the plane of the bottoms of the grooves 3, while the other is bent at right angles. In Fig. 7 the flange 5 extends downwardly at right angles to the adjacent ends 4 of the bottoms of the grooves. After the flanges have been welded in place, the oven wall is coated with vitreous enamel and baked. This coating and baking may take place either before or after the oven wall is positioned in the oven in which it is used.

The advantages of an oven wall constructed in accordance with my invention are numerous. A construction is thus produced which cannot be stamped from a single sheet of metal and yet the wall is in effect a unitary structure and at no place is there more than a single thickness of metal. This tends to make the oven heat faster as there is less thickness of heat absorbing material in the side walls than is usually found with ordinary constructions using two sheets. A minimum amount of metal is employed in the wall, which reduces the cost of construction. The interior of the hollow

ribs being entirely open at the back, the wall is readily enamelled on both sides and the metal thus perfectly protected from corrosion. As surplus enamel readily flows off from all parts of the wall, objectionable trickles and smears of surplus vitreous enamel are avoided. A sheet formed in this manner does not warp when subjected to the heat of enamel furnaces.

What I claim is:—

1. A process of forming a combined oven side wall and rack support, which consists in crimping a metal sheet to form a series of ribs separated by grooves, and then welding a sheet metal flange to the end of the bottoms of the grooves.

2. A process of forming a combined oven side wall and rack support, which consists in crimping a metal sheet to form a series of ribs separated by grooves, the ends of the bottoms of the grooves being substantially rectilinear and in alinement, and then welding a sheet metal flange to said ends.

3. A process of forming a combined oven side wall and rack support, which consists in crimping a metal sheet to form a series of ribs separated by grooves, the ends of the bottoms of the grooves being substantially rectilinear and in alinement, and then butt welding a sheet metal flange to said ends.

4. A process of forming a combined oven side wall and rack support, which consists in crimping a metal sheet to form a series of hollow ribs separated by grooves, the ends of the bottoms of the grooves being substantially rectilinear and in alinement, turning in the edges of the ends of the ribs to substantially close said ends, and then welding a sheet metal flange to the edges of the ends of the bottoms of the grooves.

5. A process of forming a combined oven side wall and rack support, which consists in crimping a metal sheet to form a series of hollow ribs separated by grooves, the ends of the bottoms of the grooves being substantially rectilinear and in alinement, turning in the edges of the ends of the ribs to substantially close said ends, then welding a sheet metal flange to the edges of the ends of the bottoms of the grooves, and finally applying a protective heat-resisting coating to both sides of the wall.

Signed at Toronto, Canada, this 10th day of January 1924.

FREDERICK W. MOFFAT.