W. McMURRAY & P. B. RULE.

OVEN DOOR.

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1,120,835. Patented Dec. 15, 1914.

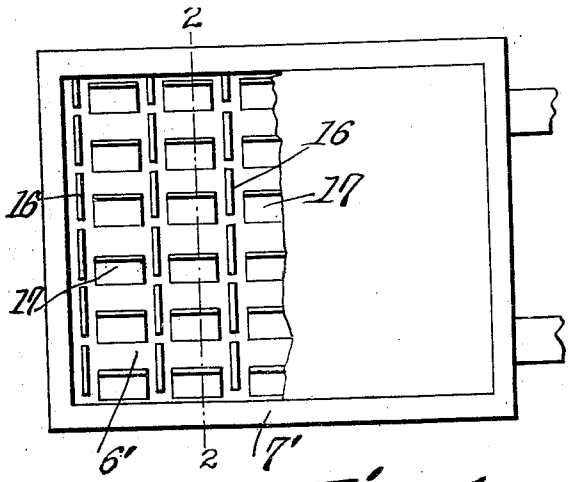


Fig. 1.

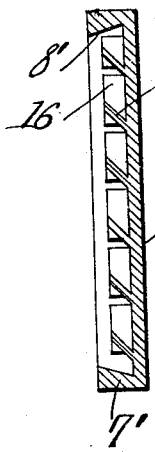


Fig. 2.

Witnesses

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UNITED STATES PATENT OFFICE.

WILLIAM McMURRAY, OF MOUNT PLEASANT TOWNSHIP, WESTMORELAND COUNTY, AND PERCY B. RULE, OF GREENSBURG, PENNSYLVANIA.

OVEN-DOOR.

1,120,835. Specification of Letters Patent. Patented Dec. 15, 1914.

Application filed February 17, 1914. Serial No. 819,290.

To all whom it may concern:

Be it known that we, WILLIAM McMURRAY and PERCY B. RULE, citizens of the United States, residing, respectively, at Mount Pleasant township and Greensburg, in the county of Westmoreland, and State of Pennsylvania, have invented a new and useful Oven-Door, of which the following is a specification.

This invention relates to improvements in oven doors and more particularly to the construction for holding the refractory lining thereto.

An object of the present invention is to provide a door such as may be used with coke ovens and to provide means carried thereby so that the refractory lining will be securely locked in place and will be wedgedly held against displacement.

A further object is to provide a coke oven door in the form of a casing and in which is placed the plastic mixture which is to form the refractory lining, and to incorporate into the base or bottom of the casing outstanding means by reason of which the lining will be held against displacement from the door, and the door protected from excessive heat or temperature by the lining.

With the foregoing and other objects in view which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of the invention herein disclosed, can be made within the scope of what is claimed, without departing from the spirit of the invention.

In the drawings accompanying this specification and forming a part thereof, the preferred embodiment of my invention is illustrated, in which:—

Figure 1 is an elevation of the door, a portion being broken away. Fig. 2 is a section on line 2—2 Fig 1.

Referring to the drawings in which similar reference numerals designate corresponding parts throughout the several views, 6′ is the back plate of the door and from which projects the circumscribing rim 7′, the end wall 8′ of which is beveled so as to define with the back plate 6′ a casing of tapering configuration so that when the plastic material is inserted therein and baked to the required hardness, it will be held against displacement by the said overhanging beveled wall of the rim.

The receptacle defined by the casing 6′—7′ and which receives the plastic mixture therein is provided with a plurality of ledges or flanges which are arranged in vertical rows as at 16 and horizontal rows as at 17. The horizontally arranged rows 17 are formed by flanges which as illustrated in Fig. 2, extend at an angle of substantially 45 degrees to the back plate, while as the vertical rows of flanges 16 project substantially at right angles thereto. Thus it will be apparent that the receptacle formed by the back plate 6′ and rim 7′ is honeycombed by a plurality of receptacles, each of which is formed of two of the vertically arranged plates 16 and the horizontally inclined plates 17.

Mention is made of the fact that the plates 16 and 17 are formed as separate units and are arranged with their ends spaced a distance apart so that the plastic material when it is introduced into the receptacle will form a contiguous and jointed heterogeneous mass and will thus be formed as a unitary solid and will be held in place by the plates in a manner as previously described. The space between the plate ends is relatively small compared with the plate lengths which provides that the door will embody a plurality of intercommunicating compartments and that the lining which is disposed therein will be formed of a plurality of connected blocks, each block being connected to all surrounding ones. The desirable feature of such formation resides in the fact that fissures or cracks will be stopped upon reaching one of the plates, thus preventing cracks or fissures, having once started, from extending entirely across the lining. The construction may be considered as formed of a plurality of flanges which are cut at spaced intervals which prevents a warping of the door due to unequal heating of the front and rear surfaces thereof. Also attention is called to the fact that the plates or flanges 16 and 17 do not extend to the outer plane defined by the ends of the rim 7′, so that the said plates will be protected from excessive heat by the refractory lining which is placed thereover.

Having thus fully described our invention, what we claim is:—

An oven door comprising a back plate with a circumscribing outstanding rim, a

plurality of parallel rows of inclined plates with their ends separated a relatively small distance apart, taken with respect to the length of each plate, each plate inclined in an outward and upward direction, and a plurality of parallel rows of plates extending at right angles to the aforementioned rows, spaced intermediate the ends thereof, and with their ends spaced a relatively short distance apart and with the opening defined therebetween contiguous to the opening defined between the ends of the aforementioned plates, the latter mentioned plates arranged in vertical rows and extending perpendicularly to the surface of said back plate, a refractory lining completely filling the compartments defined by said plates, said refractory lining formed as a plurality of connected blocks defining a unitary mass, held in place by said plates, the said plates preventing relatively long fissures in said lining and forming stops therefor.

In testimony that we claim the foregoing as our own, we have hereto affixed our signatures in the presence of two witnesses.

WILLIAM McMURRAY.
PERCY B. RULE.

Witnesses:
C. J. KLINE,
J. C. BLACKBURN

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."