July 2, 1940. G. P. SELBY 2,206,205

BRICK FORMATION

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FIG. 1.

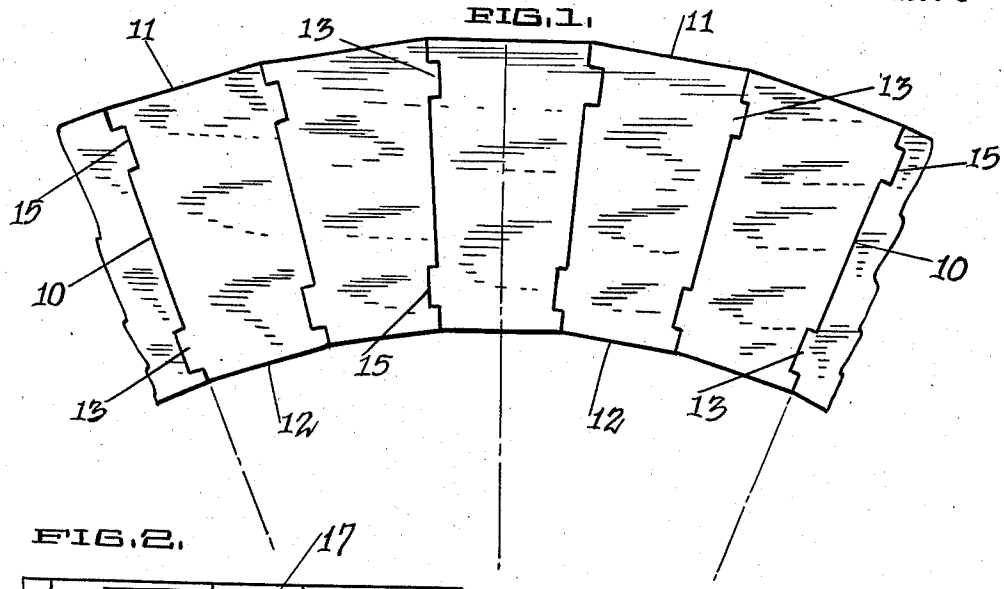


FIG. 2.

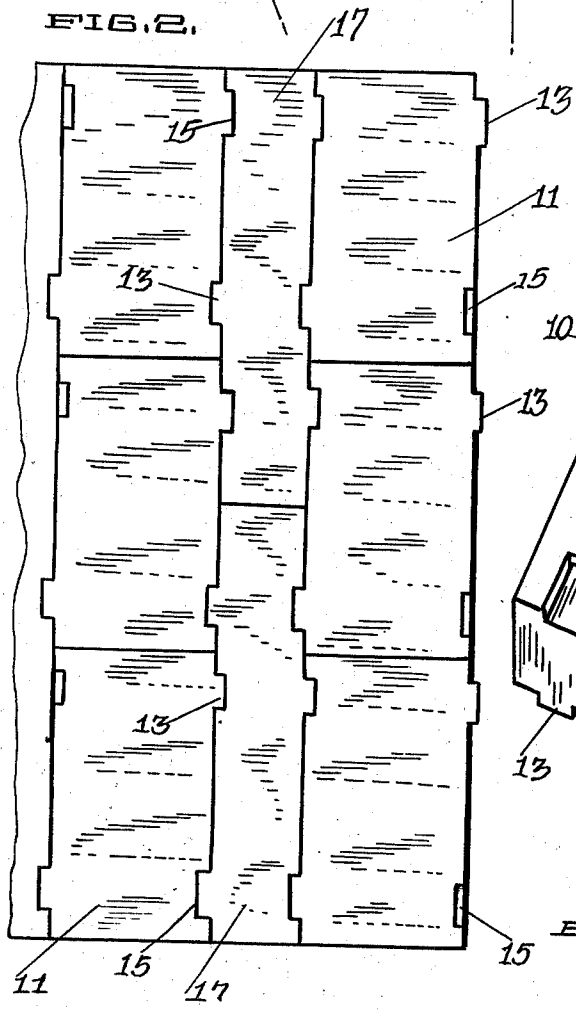
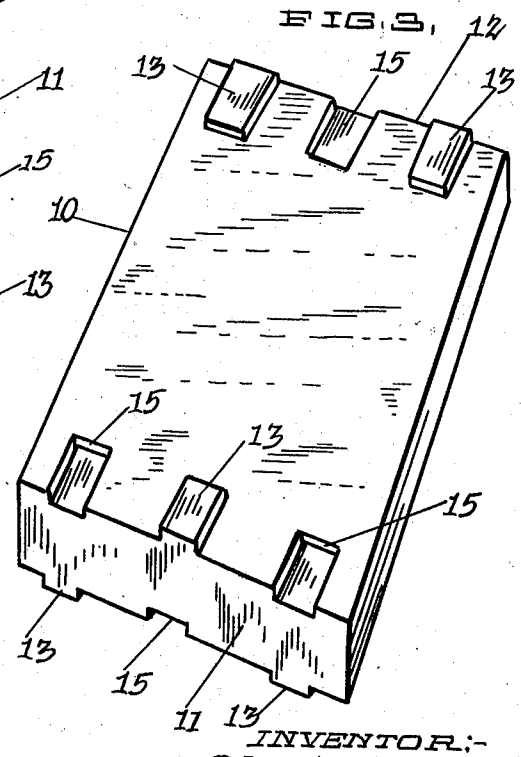


FIG. 3.



INVENTOR:-
GEORGE P. SELBY
BY Victor J. Evans & Co
ATTORNEYS.

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FIG. 4.

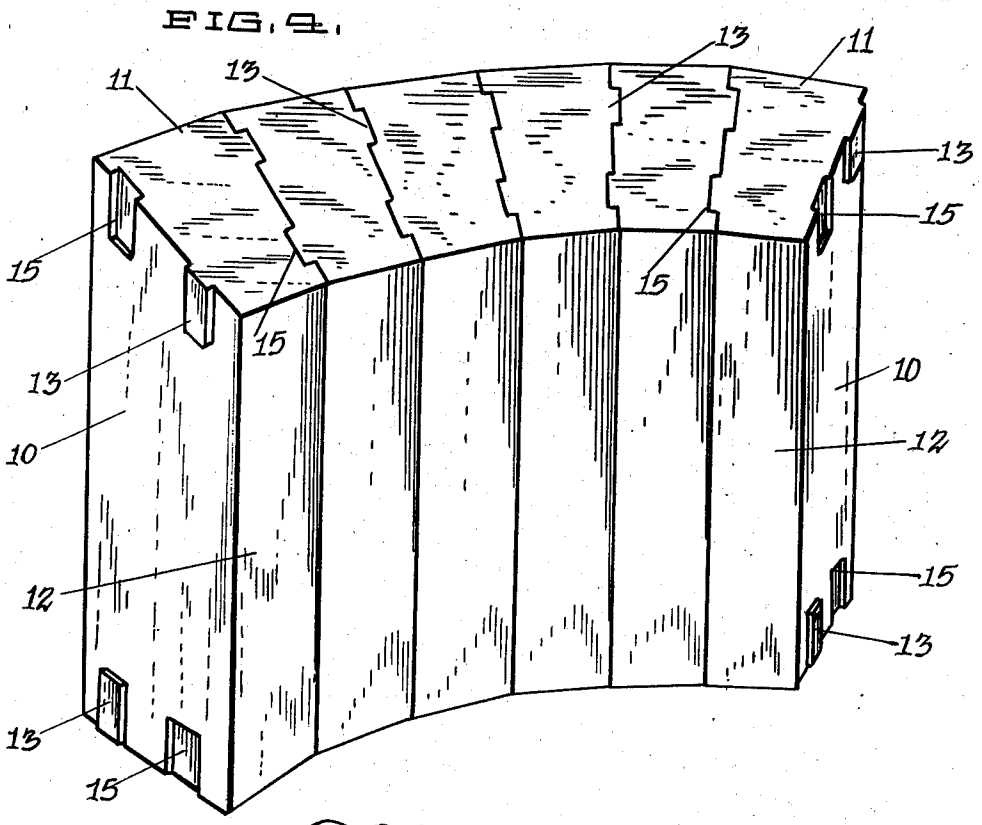
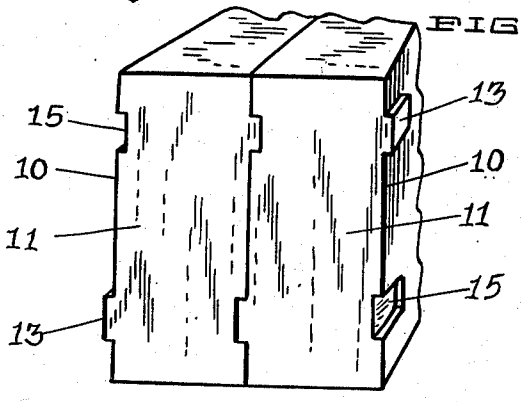


FIG. 5.



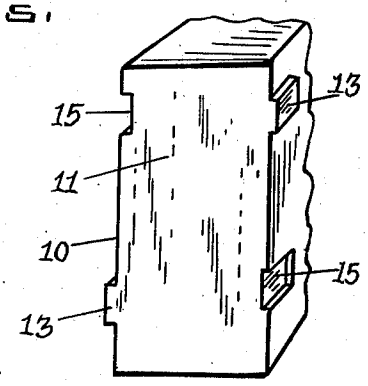


FIG. 7.

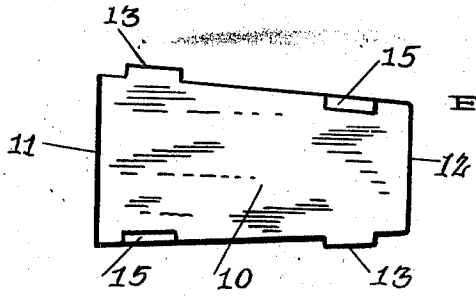


FIG. 6.

INVENTOR:-
GEORGE P. SELBY.

BY Victor J. Evans & Co.

ATTORNEYS.

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UNITED STATES PATENT OFFICE

2,206,205

BRICK FORMATION

George P. Selby, South San Francisco, Calif.

Application March 13, 1939, Serial No. 261,642

1 Claim. (Cl. 72—101)

This invention relates to improvements in brick formation and especially to brick for so-called arch furnace construction and of interlocking character, whereby each brick may be interlocked with the next succeeding brick in the formation of a lining for furnaces and the like.

The principal object of the invention is to provide a brick for arch furnace work and the like which preferably embodies a segmental body section having alternately arranged lugs and recesses formed on the faces at the ends thereof and in staggered relation so that each brick thus formed will interlock with the next succeeding brick as in forming an arch lining for ordinary furnaces or for ore reduction furnaces ordinarily utilized in the ore reduction industry and generally termed a "cupola furnace," or in any fire box lining, such as in locomotive fire boxes or stationary boiler fire boxes.

Another object of the invention is the provision of a brick of this character which is wedge-shaped longitudinally and which has formed on its side faces and at opposite ends thereof alternately positioned lugs and recesses arranged as to opposite ends in alternate or staggered relation to each other.

A further object of the invention is the provision of a brick of the character set forth that may be easily produced and that will properly interlock with the next succeeding brick in arch construction, wherein it is desired to prevent the brick from moving longitudinally or laterally to any great extent, thereby preserving the structural formation from deteriorating and breaking up a much longer period than is possible with brick of the usual character.

An additional object is to provide an interlocking brick which may be easily and readily molded to fit any desired arc generally specified in furnace arch construction.

Other objects and advantages will be apparent during the course of the following description.

In the accompanying drawings forming a part of this specification and in which like numerals are employed to designate like parts throughout the same,

Fig. 1 is a plan view of the improved brick, showing the same as applied to an arch construction;

Fig. 2 is a plan view, showing the brick arranged in tiers and having interlocking members of like character arranged therebetween;

Fig. 3 is a perspective view of one of the bricks per se, showing the opposite and alternately arranged lugs and recesses respectively;

Fig. 4 is a perspective view of a series of arch bricks arranged in interlocked relation in accordance with the principles of the invention;

Fig. 5 is a perspective view, further illustrating the brick arranged in interlocked relation;

Fig. 6 is an end view of one of the bricks, showing the alternately arranged lugs and recesses; and

Fig. 7 is a perspective view, showing the wedge formation of the brick and its alternately arranged lugs and recesses.

Insulating or arch brick of this character is produced generally from high grade diatomaceous earth and is molded and calcined in such a way that the natural laminations are eliminated and the natural pore space increased, which produces a brick of the lowest possible heat conductivity and of high structural strength and a resistance to a constant heat of at least 1700° F.

However, brick of this character and constructed of the best materials has a tendency under extreme heat to warp and pull loose, and it is, therefore, the object of the present invention to produce brick having interlocking members positioned in such a manner that each individual brick may be interlocked with the next succeeding brick so that the completed arch will be solidly locked together as a unit capable to a great extent of overcoming the difficulties set forth.

In the drawings I have shown the improved interlocking arch brick, and said brick includes a body section 10 and end sections 11 and 12, the end 11 being wider than the end 12, thus forming a wedge-shaped brick, which, of course, must conform to any desired radii required.

Referring now to Figs. 3, 5, 6, and 7, in which the brick has been shown per se, it will be noted that lugs 13 are formed on the side faces at the end edges 11 and 12 of the brick and in staggered relation, and recesses 15 are also formed on opposite side edges thereof and in staggered relation—that is, a lug is formed opposite a recess on each end edge of the brick so that the lugs will fit into the recesses when the bricks are placed together and interlocked, as shown in Figs. 1, 4, and 5, with, of course, a proper refractory mortar between each brick.

In Fig. 2 I have shown interlocking elements 17 of a corresponding configuration and capable of interlocking two or more tiers of brick together.

It will thus be observed that I have produced an interlocking brick of the character described

that when assembled and interlocked to form a furnace or like arch will greatly reduce wear and deterioration in such a brick occasioned by extreme heat, and will also greatly prolong the life of the brick assembly in general.

It is to be understood that the form of my invention herewith shown and described is to be taken as a preferred example of the same and that various changes relative to the material, size, shape and arrangement of parts may be resorted to without departing from the spirit of the invention or the scope of the subjoined claim.

Having thus described my invention, I claim:

A brick of the class described, embodying a tapered body section having formed on opposite faces flush with each end thereof alternately arranged lugs and complementary recesses, the lugs on each end of said body section being directly opposite the recesses on the remote end.

GEORGE P. SELBY.