Apr. 24, 1923. 1,452,583

W. J. WILLIAMS

INTERLOCKING FIRE BRICK FOR ARCHES

Filed May 9, 1921

Fig. 2.

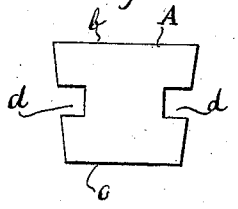


Fig. 1

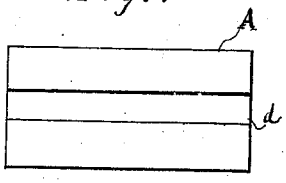


Fig. 3.

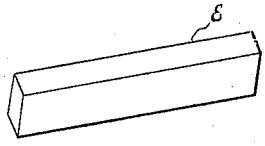


Fig. 4.

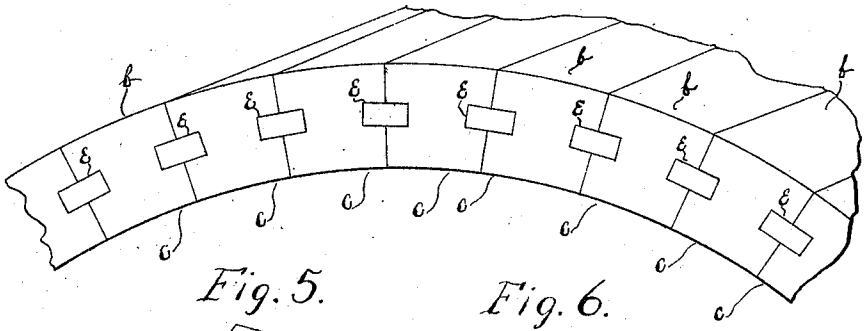


Fig. 5.

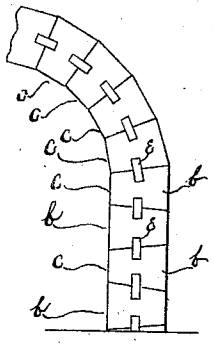


Fig. 6.

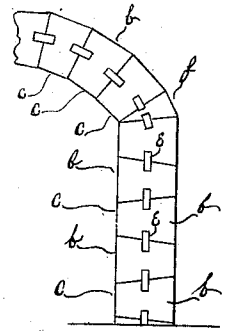
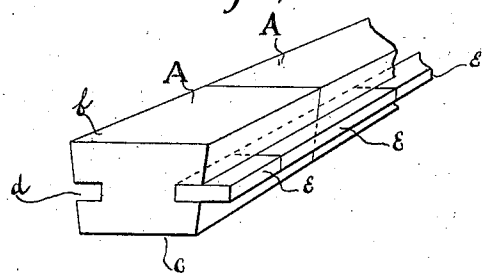


Fig. 7.



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UNITED STATES PATENT OFFICE.

WALTER J. WILLIAMS, OF BINGHAMTON, NEW YORK.

INTERLOCKING FIRE BRICK FOR ARCHES.

Application filed May 9, 1921. Serial No. 468,006.

To all whom it may concern:

Be it known that I, WALTER J. WILLIAMS, a citizen of the United States, residing at Binghamton, in the county of Broome and State of New York, have invented certain new and useful Improvements in Interlocking Fire Bricks for Arches, of which the following is a specification.

My invention relates to an improvement in interlocking fire brick, in which means are afforded for securely locking and fastening the brick in the wall or arch where used and made to present a greater resistance to the heat and to disintegration, and it has for its object to provide means for easily but securely forming an interlocking union of the blocks when placed in an arch or wall and to afford greater resistance against heat, and the deteriorating effects of constant use.

With these objects in view, my invention consists in certain novel features of construction and arrangement of parts as will be hereinafter fully described and pointed out in the claims, reference being had to the accompanying drawings, in which:

Fig. 1 is a side elevation of my device, showing the recess in the side thereof;

Fig. 2 is an end view of my device.

Fig. 3 is a perspective view of a part of my device.

Fig. 4 is a front view of a fragmentary part of arch constructed with my device.

Fig. 5 is a front view of fragmentary part of an arch constructed with my device.

Fig. 6 is a front view of a fragmentary part of an arch constructed with my device.

Fig. 7 is a perspective view showing the interlocking features of my device.

The same reference characters denote like parts in each of the several figures of the drawings.

In carrying out my invention, I provide a fire brick A, of rectangular formation shown, having the outer top and bottom surfaces or faces *b* and *c*; the face *b* being somewhat wider than the face *c*, rendering the block A in slightly wedged shaped formation. In the opposite sides of the body A, I have inlet the horizontal rectangular recess *d*; as a further part of my device, I have the elongated rectangular key *e*, also formed of fire brick material, and adapted to fit in and rest in the recesses *d*, *d*, and the key *e* may be securely mounted therein, by the application in any convenient manner of a coating or filling of cement, or other like material. In the application of the key to the bricks, and the recesses thereof, the keys *e*, *e* are so applied to the blocks A, A as to break joints in the center of the blocks A, A, as shown in Fig. 7, and thus forming a continuous surface across the end joints of the blocks A, A when laid, as shown in Fig. 7. In the application of my device to the formation of the side walls of a furnace arch or structure, I may lay the blocks of the side walls with the alternate wide and narrow surfaces of the blocks towards the interior wall face or surface, to aid in the formation of the vertical line of the wall, as shown in Figs. 5 and 6, while the interior face of the crown of the arch, is formed by laying the narrow face of the blocks towards the interior face of the arch, as shown in Figs. 4, 5 and 6, with the locking keys *e*, *e* inserted in the recesses, *d*, *d* between each block as before described. For example in Figs. 5 and 6, the wall is laid with block faces, alternating, *b*, *c*, *b* *c*, presenting the alternate wide and narrow surface of the block A towards the interior. In the formation of the arch I have the key brick "*f*" as shown in Figure 6 and elect to use the same, or other material of like formation to give the right angle formation to the arch. In operation while the heat and flame may slowly disintegrate the cement between the blocks on the interior of the wall surface, its progress and effects find an effective resistance in the surface of the key *e*, when reached and further progress up or down the surface of the key, is effectively resisted by the angle of the recess supporting the key. Thus the arch wall and side walls so constructed will not fall or sag but offer a firm resistance to lateral or downward vertical pressure.

Having thus described my invention what I claim as new and for which I desire Letters Patent, is as follows:

An arch for furnaces and the like, having

vertical side walls and arcuate top wall, said arch being formed of wedge shaped bricks having locking recesses in each opposite side face, the vertical walls of the arch being formed by arranging each alternate brick of a row with its narrow face toward the interior of the arch, locking keys for engaging the recesses in the bricks the said keys breaking joint intermediate the ends of the brick, and means for securing the keys in place.

In testimony whereof I have affixed my signature.

WALTER J. WILLIAMS.