

(No Model.)

F. C. ROBERTS.
HOT BLAST STOVE.

No. 570,104.

Patented Oct. 27, 1896.

FIG. 1.

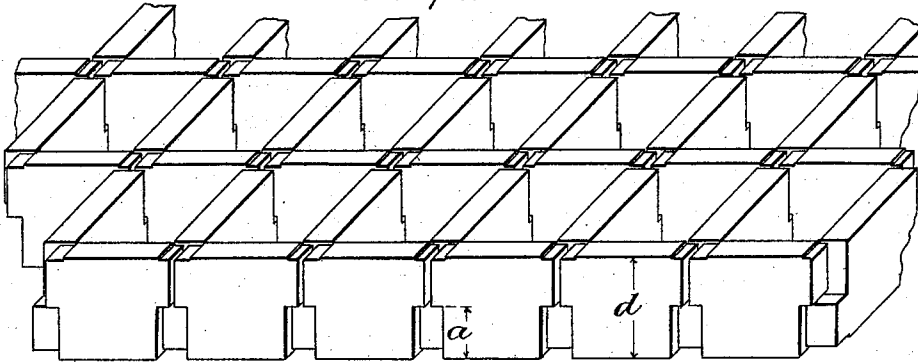


FIG. 2.

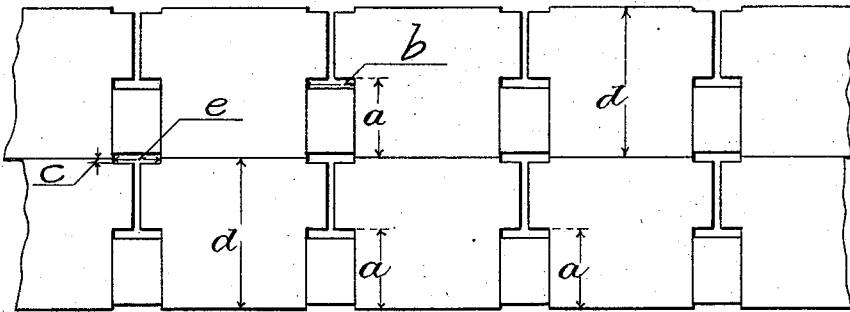


FIG. 3.

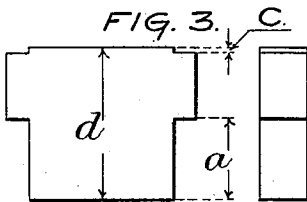


FIG. 4.

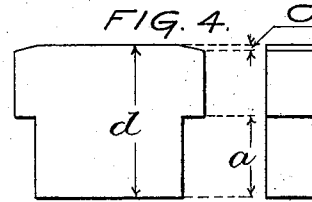


FIG. 5.

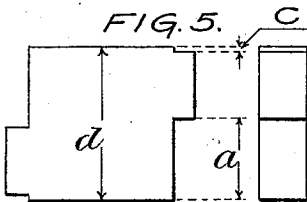
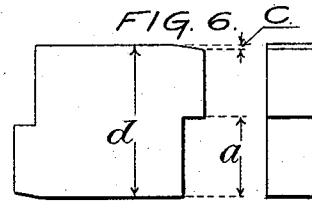


FIG. 6.



WITNESSES:

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HOT-BLAST STOVE.

SPECIFICATION forming part of Letters Patent No. 570,104, dated October 27, 1896.

Application filed January 29, 1896. Serial No. 577,298. (No model.)

To all whom it may concern:

Be it known that I, FRANK C. ROBERTS, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented a new and useful Improvement in Fire-Brick Hot-Blast Stoves for Heating Air, Steam, or other Gases, which improvement is fully set forth in the following specification, taken in connection with the accompanying drawings.

My invention relates to an improvement of the invention set forth in and covered by United States Letters Patent No. 511,253, granted me December 19, 1893, and has for its object the securing of greater durability to the flue structure. I attain this object by the designs illustrated in the accompanying drawings, in which—

Figure 1 is an isometric view of a portion of a regenerator, showing the flue structure; Fig. 2, a vertical section taken through one of the walls of the flue structure; Figs. 3, 4, 5, and 6 views showing elevations of bricks which may be used in building the flue structure.

Similar letters refer to similar parts throughout the several views.

According to the character of the flue structure set forth in United States Patent No. 511,253, granted me December 19, 1893, it is possible to concentrate weight of superincumbent brickwork on some of the offsets at the ends of the individual brick. Manifestly this is objectionable, since these offsets are capable of supporting but little weight, and consequently they are liable to be broken off. The main purpose of these offsets is to hold securely in position each individual brick. Hence if these offsets are broken the bricks so affected are likely to be displaced by the movement of the flue structure consequent on contraction and expansion. As a result the flues may not retain their original shape and projecting surfaces may be formed upon which the dirt contained in the gases would be deposited and the heating capacity of the stove thus impaired.

Specifically, then, the object of my invention is to provide a brick with the offsets so designed that when the bricks are laid up to form a regenerator it shall be impossible for superincumbent weight of brickwork to rest

on these offsets. The shape of an individual brick to meet these requirements is shown in Fig. 3, and one manner of laying up these brick is indicated in Figs. 1 and 2. In order to meet the requirement that no weight of superincumbent brickwork shall rest on the offsets, it is evidently necessary, from Figs. 1 and 2, that there be no contact between the surfaces of the offsets adjacent at joints *b* and joints *e*.

Referring to Figs. 2 and 3, it is evident that if the distance *a* is more than one-half the total depth *d* of the brick no contact can take place between the surfaces of the various offsets adjacent at *b*. Again, if the upper surface of the offset is not in the same plane as the upper surface of the main body of the brick, (see Fig. 3,) but is below by any distance *c*, then it is evident that no contact can take place between the surfaces of the various offsets adjacent at *e*. Thus by the use of the brick illustrated in Fig. 3 the flue structure of the regenerator can be built so that the offsets in no case are subjected to the weight of the brickwork.

It is evident from the manner of laying up these brick that it is necessary that the offsets or projections shall extend outward from the main body of the brick a distance equal to one-half or less than one-half the breadth of the brick. In other words, the offsets in their horizontal direction must be equal to one-half or less than one-half the breadth of the brick.

I do not limit my invention to the use of the brick illustrated in Fig. 3. Other suitable forms of brick may be employed, among which are those shown in Figs. 4, 5, and 6.

I do not limit the application of one of the bricks shown in Figs. 3, 4, 5, and 6 in the construction of a regenerator to the exclusion of the others. Two or more shapes may be employed in the same regenerator. I do not limit the application of these bricks to the exclusion of the bricks illustrated in my United States Patent No. 511,253 before referred to. The object of my invention may be attained by using the bricks shown in Figs. 3, 4, 5, and 6 together with those shown in my United States Patent No. 511,253.

I do not limit the application of the brick shown in Figs. 3, 4, 5, and 6 to the method of

constructing the regenerator illustrated in the accompanying drawings. It is possible to employ other systems of construction with these brick, such as, for instance, that illustrated and described in United States Patent
5 No. 511,253, granted me December 19, 1893.

Having fully described my invention, what I claim, and desire to cover by Letters Patent, is—

10 In a hot-blast-stove regenerator, a flue structure composed of bricks provided with an offset or projection in each of their two ends extending across the breadth of the bricks and

which offsets in their vertical direction are equal to less than one-half the depth of the bricks and which offsets in their horizontal direction are equal to one-half or less than one-half the breadth of the bricks and which offsets have neither their upper nor lower surfaces in the same plane as respectively the upper and lower surfaces of the main body of the bricks. 15 20

FRANK C. ROBERTS.

Witnesses:

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I. G. BAYLEY.