D. LAMOND.

CHECKER BRICK FOR HOT BLAST STOVES.

APPLICATION FILED JUNE 17, 1909.

935,372. Patented Sept. 28, 1909.

Fig. 1.

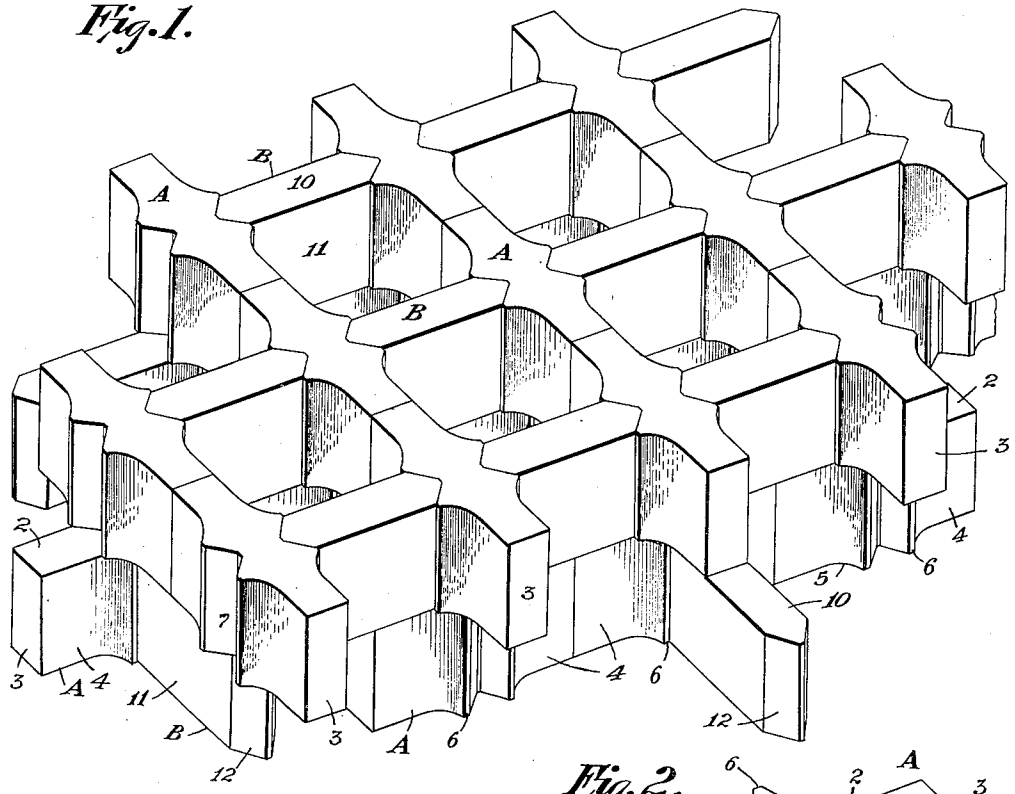


Fig. 2.

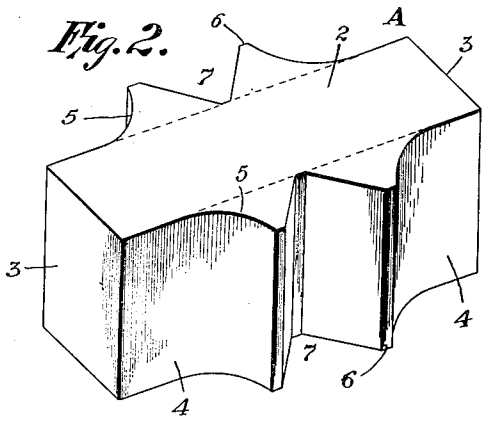
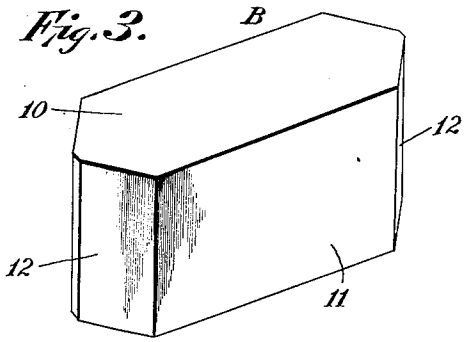


Fig. 3.



Witnesses;

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UNITED STATES PATENT OFFICE.

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CHECKER-BRICK FOR HOT-BLAST STOVES.

935,372. Specification of Letters Patent. Patented Sept. 28, 1909.

Application filed June 17, 1909. Serial No. 502,705.

To all whom it may concern:

Be it known that I, DAVID LAMOND, a resident of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Checker-Brick for Hot-Blast Stoves, of which the following is a specification.

The object of this invention is to provide bricks of improved shape for the checker work or flues of hot-blast stoves, which, owing to their shape, are laid in such manner as to break joints and make an efficient bond.

In the operation of hot-blast stoves the checker work is subjected to sudden and wide variations in temperature, and the resulting expansion and contraction is extremely hard on the brick work, and soon results in breaking down the same unless bonded in such way as to resist the destructive action. In the improved brick I have not sacrificed the essential element of strength, the brick being of such shape, and their more vulnerable parts so filleted, as to protect them against injury.

In the accompanying drawings, Figure 1 is a perspective view of a series of brick laid up in checker form as when constructing flues for hot-blast stoves. Fig. 2 is a detail of the brick of novel design which is laid in uninterrupted rows in each vertical course, and Fig. 3 is a detail of the row-connecting brick.

The invention as here embodied consists of two shapes A and B. Shape A consists of a rectangular body 2, having the squared end faces 3. For a distance inwardly from each end the opposite vertical faces 4 of the brick are flat, but these flat faces merge into the curves or fillets 5 which form the outer vertical faces of ribs or ridges 6. The inner or adjacent faces of these ridges preferably converge inwardly and form a socket-like depression 7, the horizontal depth of which is preferably equal to the projection of the ridges outwardly from faces 4, so that each brick has an uninterrupted rectangular area, the length of which corresponds to the length of the brick and the width to the distance between opposite faces 4, as indicated in dotted lines in Fig. 2. Fillets 5 strengthen the projecting ribs and in the built-up structures provide rounded corners for the flues, as indicated in Fig. 1, which are less liable to collect dirt than angular corners.

It is characteristic of the invention that shapes A are assembled in continuous or uninterrupted parallel rows in each course, each shape A joining at the ends with the ends of like shapes. These parallel rows of each course are arranged at right angles to the like rows immediately above and below, so that the shapes A are centered above and below each other, though in reverse or right angle positions.

While the invention is not limited to proportioning shapes A as here shown, yet when so proportioned the ends of adjacent shapes meet at the centers of the opposite flue walls.

The rows of shapes A are connected by shapes B, which are of the form shown in Letters Patent granted me November 4, 1902, No. 712,690, each consisting of a body portion 10 having parallel side faces 11, and at each end the converging surfaces 12 which form wedge-shaped extremities which fit depressions 7. As will be seen, the full length of shape B corresponds to the distance between depressions 7 of adjacent shapes A, so that when the two shapes are laid up as shown, flues are formed having side walls of equal horizontal dimensions, connected by rounded corners.

The centering of shapes A in right-angle relation in succeeding courses provides for effectively bonding or overlapping the joints between shapes A and B, so that none of the joints or seams in one course aline with the joints or seams of the course immediately above or below, and the integrity of the flue is preserved notwithstanding the distorting tendencies due to expansion or contraction under the wide variations of and sudden changes in temperature.

While the improvement is designed primarily for fire-brick stoves for blast furnaces, it may be used to advantage whereever brick checker work is required without departing from the invention.

I claim:—

1. Flues for a hot-blast stove consisting of bricks laid in courses, the bricks of each course consisting of uninterrupted parallel rows which define one transverse dimension of the flues, and connecting bricks between the rows defining the other transverse dimension of the flues with means for interlocking the ends of the transverse bricks with the bricks arranged in uninterrupted rows, and uninterrupted rows of one course being at

right angles to the corresponding rows of the courses above and below.

2. Flues for hot-blast stoves consisting of bricks laid in courses, the bricks of each course being arranged in parallel rows with inwardly extending depressions in their opposite sides, and bricks connecting the rows with their extremities entered in the depressions, each uninterrupted row of bricks being at right angles to the corresponding rows above and below.

3. Flues for hot-blast stoves consisting of bricks laid in courses, each course consisting of parallel uninterrupted rows of bricks, each brick of each row having inwardly extending depressions in its opposite sides with the depressions located between the ends of the bricks, and transverse bricks connecting the adjacent rows with their extremities entered in said depressions, the uninterrupted rows of each course being at right angles to the corresponding rows of the courses above and below.

4. Flues for hot-blast stoves consisting of bricks laid in courses, the bricks of each course arranged in uninterrupted parallel rows and bricks connecting the adjacent rows, each brick of each row having an inwardly extending depression in the center of its side face and of the full depth of the brick, and said depressions and the extremities of the connecting bricks being shaped to fit one within the other.

5. Flues for hot-blast stoves consisting of bricks laid in courses, the bricks of each course being arranged in uninterrupted parallel rows with bricks connecting the adjacent rows, the bricks of the rows each having V-shaped depressions in their opposite faces, and the extremities of the row-connecting bricks being V-shaped to enter said depressions.

6. Flues for hot-blast stoves consisting of bricks laid in courses, the bricks of each course arranged in uninterrupted parallel rows, each brick of each row having depressions in its opposite faces, bricks between and connecting the rows with their extremities entered in said depressions, each brick of each of the uninterrupted rows corresponding in length to the combined transverse length and thickness of each of the connecting bricks, the uninterrupted rows of each course being arranged at right angles to the like rows of the courses above and below.

7. Flues for hot-blast stoves consisting of bricks laid in courses, some of the bricks of each course arranged in parallel rows with each brick of each of said rows centered with and extending at right angles to the corresponding bricks of the courses above and below, each of said bricks having side depressions, and bricks connecting the recessed bricks of adjacent rows with the ends of the connecting bricks entered in said depressions.

8. A brick of greater length than width and having V-shaped sockets in opposite faces thereof.

9. A brick for checker work having projecting ridges on opposite faces, the ridges having flat inwardly converging faces.

10. A brick for checker work having projecting ridges on opposite faces, the ridges having flat inwardly converging faces meeting at their inner extremities and forming V-shaped sockets.

11. A brick of greater length than width and having ridges projecting from its longer sides, the ridges of each side spaced apart with their inner faces converging inwardly to form a V-shaped socket, in combination with connecting bricks having their lengths disposed at right angles to that of the socket-formed brick and formed with V-shaped ends which fit the sockets.

In testimony whereof I affix my signature in presence of two witnesses.

DAVID LAMOND.

Witnesses:
ALEX. S. MABON,
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