

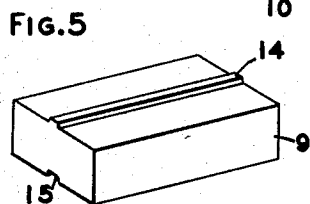
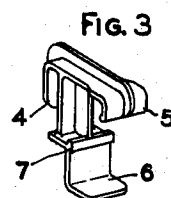
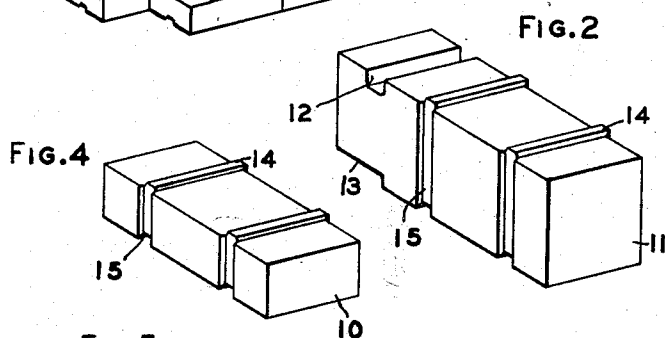
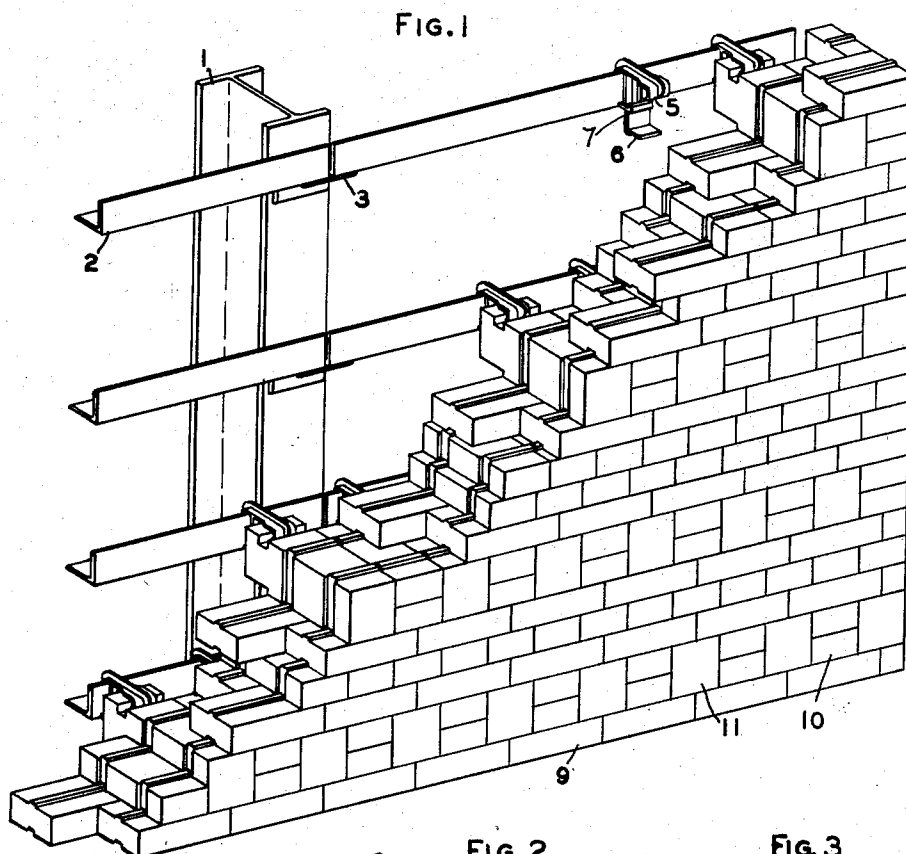
Aug. 19, 1958

G. P. REINTJES
MODULAR SUSPENDED WALL

2,847,849

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2 Sheets-Sheet 1



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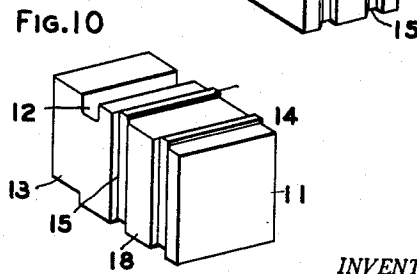
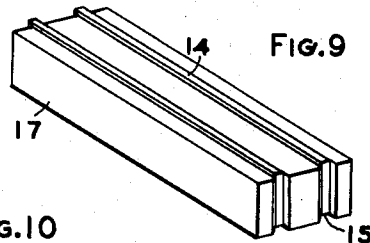
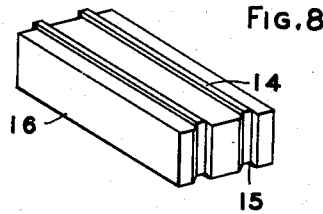
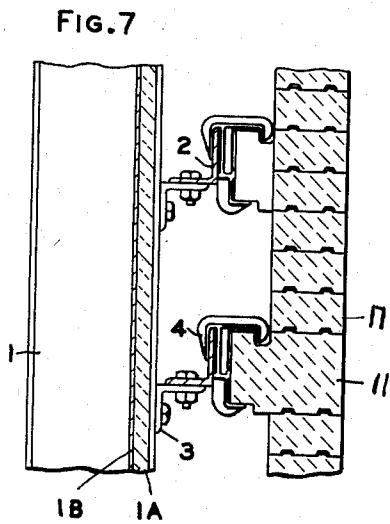
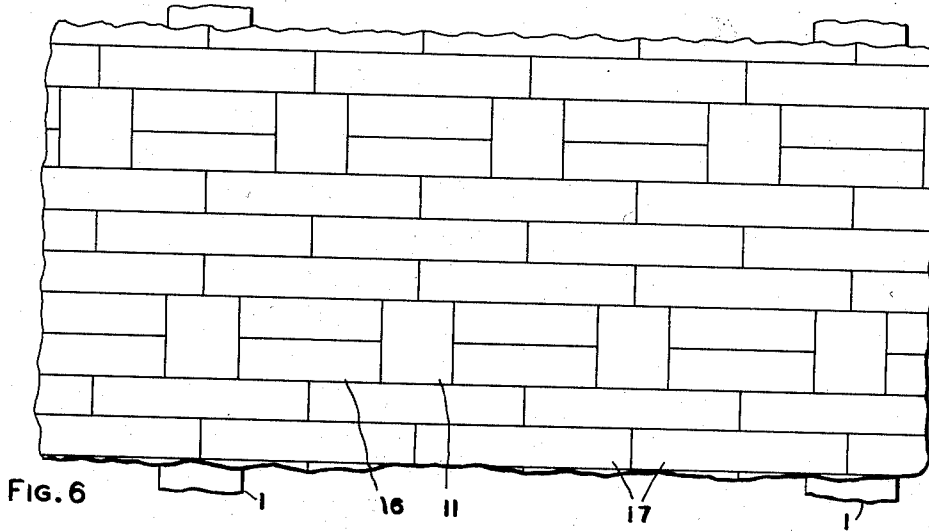
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MODULAR SUSPENDED WALL

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Application November 28, 1955, Serial No. 549,382

1 Claim. (Cl. 72—101)

This invention relates to modular furnace walls in which all tile and brick bear a predetermined relationship in cross sectional area, namely, the central locking or supporting tile has a cross sectional area, by preference, of twice that of the height of a standard brick and is formed on its four side faces with opposite tongues and grooves, so that the designer, knowing the modular or mean dimensions, can readily design for openings, ports and the like, without special shapes.

Another object of the invention is to produce a construction in which all brick and tile interlock with adjacent members on their top, bottom and side faces to prevent air infiltration and to produce a wall in which the courses cannot be horizontally displaced.

A further object of the invention is to provide a wall which is tied back and supported from the furnace framework by means of a tile, against inward and downward movements, the construction being completely flexible so that the tile can move vertically and horizontally to accommodate limited movements of the wall due to expansion and contraction.

A still further object of the invention is to provide an interlocked wall of such nature that the vertical and horizontal positioning of the tile may be as desired, depending upon the number of brick courses to be supported, and without requiring vertical alinement of any of the key tile unless desired.

With the general objects named in view and others as will hereinafter appear, the invention consists in certain new and useful features of construction and organization of parts as hereinafter described and claimed; and in order that it may be fully understood, reference is to be had to the accompanying drawings, in which:

Figure 1 is a fragmental perspective view of a double wall construction embodying the invention.

Figure 2 is a perspective view of the wall supporting tile secured to the framework of the furnace.

Figure 3 is a perspective view of a tile supporting hanger or clip which is free for vertical and horizontal adjustment to accommodate movement of the wall.

Figure 4 is a perspective view of one of the header brick used in the construction of the wall shown in Figure 1.

Figure 5 is a perspective view of a stretcher brick as used in the wall of Figure 1.

Figure 6 is a perspective view of a wall of single brick thickness.

Figure 7 is a section through the wall of Figure 6.

Figure 8 is a perspective view of a spacer brick as used between the tile of Figure 6.

Figure 9 is a perspective view of a stretcher brick as used in Figure 6.

Figure 10 is a perspective view of the supporting tile as used in Figure 6.

In the said drawings, where like reference character identify corresponding parts in all of the figures, 1 are the metal uprights of a furnace and secured thereto in vertically spaced relation are horizontal stringers 2, said

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stringers being carried, if desired, on brackets 3 secured to the uprights 1, as shown in detail in Figure 7.

The stringers 2 are engaged by tile supporting clips having downwardly opening hooks 4 for vertical and horizontal sliding movement on the stringers 2 to allow a range of adjustment as the furnace expands and contracts. Extending outwardly from the hook 4 and facing downwardly is a hook arm 5 which overlies a horizontal shelf portion 6. Intermediate the shelf 6 and the hook 5, the clips are preferably provided with an abutment 7 to transfer the outward thrust of a cantilevered tile, hereinafter identified, to the stringers 2.

In the double wall construction one shape of tile and two sizes of bricks are used, horizontal rows of stretcher brick 9 being laid up in double-wall with horizontal joints of each row offset, and at desired intervals tile 11, and courses of header brick 10 are placed in position as shown in Figure 1. Tile 11 and brick 10 are formed on their four sides with pairs of oppositely disposed tongues and grooves 14 and 15 respectively, while the brick 9 have their upper and lower faces respectively formed with tongues and grooves of similar nature. With this construction it will be apparent that the cross sectional area of the brick 10 and tile 11 are multiples of the cross sectional area of the brick 9, that of a standard brick. Thus a modular completely interlocked wall results in which all of the elements are tied back to the metal framework of the furnace, the wall is sealed against air infiltration and no brick can be horizontally displaced.

No part of the wall projects outwardly beyond its outer face except the end of the tile 11, which are formed in their upper faces with grooves 12 and on their lower outer faces with recesses 13, for respective engagement with the hooks 4 and the shelves 6 of the hanger clips, the cantilever weight of the tile being transmitted from its outer face to the abutments 7 of the clips and hence to stringers 2. In the erection of the wall as many courses of brick as desired may overlie each row of spaced tile 11 as shown in Figure 1, where the vertical spacing of the stringers is shown as variable with a corresponding variation in the number of brick courses.

If desired the furnace can be enclosed with insulation and encasement 1A and 1B, Figure 7. With this arrangement the stringers 2 and clips 4 may be air cooled. As the clips 4 need not be in vertical alinement the air is free to circulate in all directions, both vertically and horizontally.

In Figures 6 through 10 a single thickness wall employing the same modular arrangement, is illustrated. In this wall the tile 11 are of less length than as shown in the double wall, and the longer brick 17 are laid up in longitudinal rows with the shorter brick 16 being disposed between adjacent tile 11. It will be noted that the length of the tile as at 18, between the tongues and grooves is less than the corresponding distance in the similar tile 11, of Figure 1.

From the above description and drawings, it will be apparent that I have produced a construction embodying all of the features of advantage set forth as desirable, and while I have described and illustrated the preferred construction, I reserve the right to all changes within the spirit and scope of the appended claim.

I claim:

A furnace wall construction comprising a series of vertically spaced horizontally extending stringers, tile supporting clips horizontally and vertically adjustable on said stringers, each of said clips having a downwardly opening hook and an underlying shelf, a plurality of horizontally spaced tiles defining horizontal courses along said stringers, each tile being supported by one of said clips and having an upper groove engaging a hook thereof and a bottom recess in seating engagement with the shelf

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of the same respective clip, each tile having complementary tongues and grooves on its top and bottom surfaces and on its two opposite side surfaces, a plurality of horizontal courses of stretcher bricks being supported by each of said courses of said tile, each of the stretcher bricks having top and bottom tongues and grooves, each brick of one of said courses of stretcher bricks being disposed end to end with each end supported on one of the tiles in a course directly beneath and with the portion of each brick between its ends spanning the space between a pair of adjacent tiles, each stretcher brick in said one course having a tongue and groove interlock with the tiles providing the support therefor, header bricks having tongues and grooves on the top, bottom and side surfaces and being positioned in the spaces be-

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tween the tiles, another of said plurality of courses of said stretcher bricks directly underlying a course of said tiles supporting said one course of stretcher bricks, and said header bricks having tongue and groove interlock with the spaced tiles, the stretcher brick in said course underlying said tiles and the stretcher brick supported by said tiles.

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