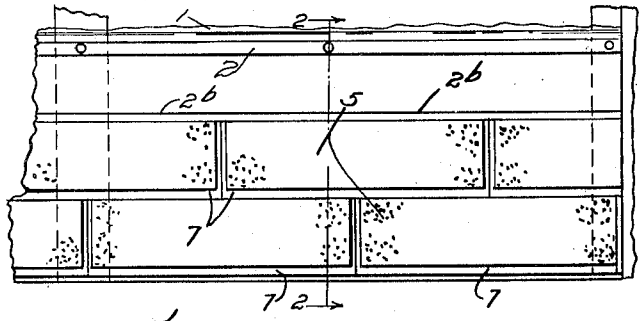
Nov. 30, 1943. L. E. WILLSON 2,335,555

BUILDING WALL CONSTRUCTION

Filed Sept. 5, 1939

Fig. 1



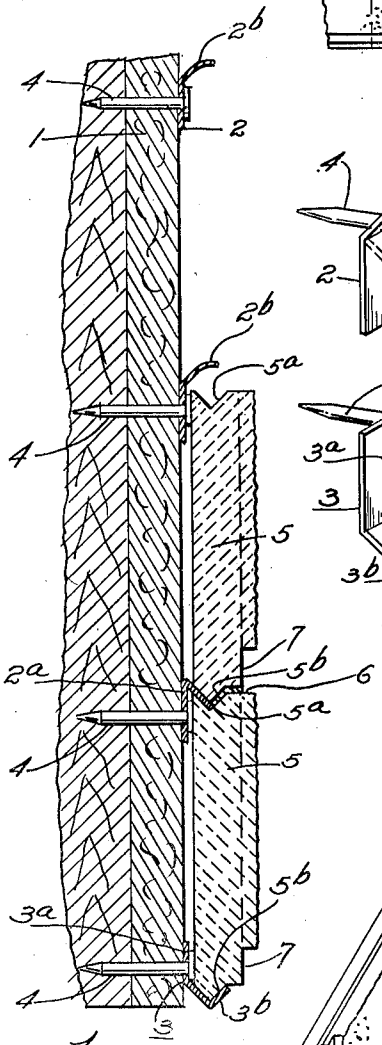
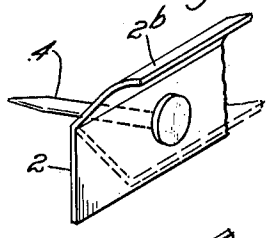


Fig. 2.

Fig. 3.



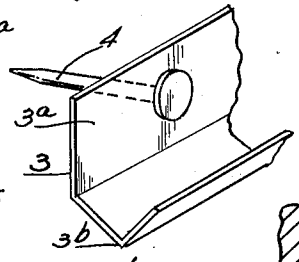


Fig. 4.

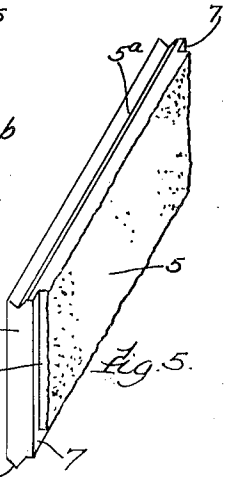


Fig. 5.

Fig. 7.

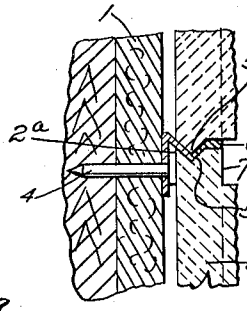
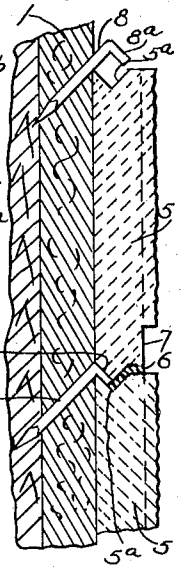


Fig. 8.



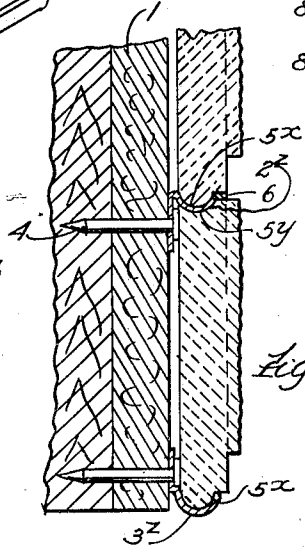


Fig. 6.

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UNITED STATES PATENT OFFICE

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BUILDING WALL CONSTRUCTION

Lester E. Willson, Streator, Ill.

Application September 5, 1939, Serial No. 293,337

3 Claims. (Cl. 72—19)

This invention relates to building wall construction of the type designed to produce a wall having the external appearance of standard brick or tile wall and employing relatively thin slabs or tiles in combination with a backing material to which they are secured. One object of the invention is to provide a structure which may be rapidly and accurately erected without the employment of skilled masons. Another object is to provide a type of construction such that the positioning of the tiles on the backing may be predetermined, preferably in the manufacture of the backing at the factory. Another object is to provide a wall structure combining ornamental value with heat-insulating properties and weather-resisting qualities, and one which will afford marked economies in the cost of building, both in the manufacture of the elements of the structure and in the cost of labor involved in erecting it. The invention consists in the features and elements of construction and in the method of combining them, as herein shown and described and as indicated in the claims.

In the drawing:

Fig. 1 is a partial elevation of a section of a building wall constructed in accordance with this invention.

Fig. 2 is a vertical section taken as indicated at line 2—2 on Fig. 1.

Fig. 3 is a fragmentary detail perspective view of the form of tile-securing means shown in Fig. 2.

Fig. 4 is a fragmentary detail perspective view of the starting rail shown in Fig. 2.

Fig. 5 is a perspective view of one of the brick slabs or tiles of the type shown in Fig. 2.

Fig. 6 is a fragmentary sectional view similar to Fig. 2 showing a modified form of tile slab.

Fig. 7 is a sectional view similar to Fig. 2 showing another modification in the form of a slab.

Fig. 8 is a sectional view showing a modified form of tile-securing means.

This improved wall structure is designed particularly for exterior or interior walls adapted to be supported on wooden frame structure but giving the appearance of a typical brick construction. The framing usually includes joists or timbers which may or may not be covered with the usual wooden sheathing, but which, in either case, will support a backing layer, 1, of composition wall-board, such as Celotex, having a tough, fibrous structure and effective heat-insulating qualities. This material is frequently made thick enough to dispense with the sheathing boards, so that it may be applied directly to the studding or other joists. As shown in Figs. 1 and 2, the backing layer of wall-board, 1, has secured to it metallic fastening elements, 2, which may be of strip form extending horizontally over the outer surface of the backing, 1, and at vertically spaced intervals corresponding to the desired spacing of the slabs or tiles which are to constitute the outer layer of the wall. A starting rail, 3, also of sheet metal, is secured to the backing, 1, to support the lowermost row of tiles, and, as shown in Fig. 2, this rail comprises a portion, 3^a, fastened flatly against the backing, 1, as by nails, 4, while a V-shaped channel portion, 3^b, projects from the face of the backing.

Each of the tiles or slabs, 5, is formed with an upwardly open groove, 5^a, extending along its upper edge, and with a downwardly projecting tongue, 5^b, on its lower edge. The channel, 3^b, of the starting rail thus receives the tongues, 5^b, of the tiles of the first row, and, being a channel, it not only supports them but retains them against the backing layer, 1, along their lower edges.

Each of the securing strips, 2, comprises a portion, 2^a, which is secured flatly against the backing layer, 1, as by nails, 4. A flange portion, 2^b, extends outwardly from the surface of the backing layer, 1, and, preferably, it trends initially upward so that when the tiles are placed flatly against the backing the flange, 2^b, will overhang the grooves, 5^a, in their upper edges. This flange is then bent down into the grooves, 5^a, to retain the tiles. If the fastening member, 2, is made in the form of a continuous strip extending throughout the width of a panel of the backing material, 1, it may be thus clinched progressively over the tiles as they are placed, one at a time, in the row, and, if necessary, a final clinching or creasing operation may be performed with any suitable blunt tool after the row has been fully assembled. Preferably, to insure an effective gripping action by the flange, 2^b, this portion of the fastening member may be curved or bent in downwardly concave form so that its outer edge will make the first contact with the wall of the grooves, 5^a, although the placement of the next row of tiles with their tongues, 5^b, super-imposed on the flanges, 2^b, of the fastening means will tend to flatten them, as seen in Fig. 2. Before a second row of tiles is placed above the first, the grooves, 5^a, of the first row are brushed, or partially filled, with a plastic water-proofing material, indicated at 6 in Fig. 2; thus, a water-tight joint is secured when the tongues, 5^b, of the next

row are entered in the grooves, 5^a. This interengagement of the tongues and grooves also serves to secure the lower edges of each successive row of tiles, while the upper edges are fastened in place by bending over the flanges, 2^b, of the holding means extending from the surface of the backing layer, 1. Both ends of the tile, 5, are made with flat edges, 5^c, and the adjacent tiles of each row are butted close together; also, if desired, these end surfaces, 5^c, may be also brushed with a water-proofing plastic so that the entire outer surface of the wall shall present a water-tight structure.

To give the appearance of a typical brick wall, each tile is formed with shallow marginal depressions, 7, offset slightly back of the plane of the principal outer surface. In the form of tile shown in Figs. 1, 2 and 5, the recessed surface, 7, which extends along the lower edge of the tile, is of about the width of the usual "joint," commonly filled with tuck-pointing in brick construction, while the recesses, 7, at the ends of the tile are of about half that width, so that the abutting ends of adjacent tiles produce a shallow channel corresponding to the full width of a "joint." However, it will be evident that instead of a half-width recess at each end, the tile could be made with a full-width recess at one end only, so that the next adjacent and abutting tile would merely complete the shallow channel representing the vertical joint between bricks. In the manufacture of slabs or tiles for exterior use it may be understood that the principal surface of each tile will usually have a relatively rough texture, such as that of wire-cut brick; but in the process of manufacture the recesses, 7, may be formed with relatively smooth surfaces so as to afford a contrast in texture. And, if desired, the channels formed by the recesses, 7, may be coated in a contrasting color or with a white, paint-like material after the wall has been erected, or they may be so coated in the process of manufacture or dusted with a dry coloring material before burning, so that this coloring material will be fused onto the surface at the recessed portions, 7.

It will be evident that the same general features and methods of erection may be applied to interior tile, which is usually made with an enameled surface and which is usually laid up with quite narrow joints instead of the wide, tuck-pointed joints characteristic of brick construction. Therefore, in the case of enameled tile, the marginal recesses, 7, may be made considerably narrower, or, if desired, may be wholly omitted. In the latter case the width of joints between adjacent tiles will be governed by the amount of plastic filler like that employed at 6, and these joints may be filled in the usual manner, with plaster of Paris or other cement.

Fig. 6 shows a modified form of tile in which the tongues, 5^x, are of convexly rounded cross-section instead of V-shaped, as in Fig. 2, and in which the grooves in the upper edges of the tile at 5^y are similarly curved in cross-section. When this form is adopted the projecting flanges, 2^z, of the fastening elements will be correspondingly shaped, and the channel, 3^z, of the starting rail will also be of rounded contour, as indicated in Fig. 6.

Fig. 7 shows in cross-section a modified form of tile in which the recess, 7^x, is formed adjacent the upper edge instead of along the lower edge of the tile. This brings the ledge, which constitutes the lower edge of the recess, below the joint between tiles instead of in alignment with them, so that there is less tendency for water to accumulate at the joint; on the other hand, if the tile were made quite thin, this location of the recess, 7, might unduly weaken the cross-section just in front of the groove, 5^a.

Ordinarily, it may be understood that the fastening element, 2, being made in strips equal in length to the width of the backing panel, 1, to which they are applied, will be applied to the sheets of backing material at the factory, so that erection of the wall will be thus facilitated on the job. However, if preferred, the backing sheets may be merely ruled with parallel horizontal markings, which will indicate proper location for the fastening strips, 2, or other fastening means. In this case the sheet metal members, 2, may be made quite short and fastened at intervals along the ruled lines on the backing, 1, so that one or two of these clips will be positioned to be bent over into engagement with each tile, 5, as it is applied. Or, instead of using sheet metal devices of this character, I may employ special nails, such as that indicated at 8 in Fig. 8, which may be driven into the backing sheet, 1, obliquely with their hook-like heads or terminals, 8^a, engaging in the grooves, 5^a, of the tiles.

While there is shown and described herein certain specific structure, embodying the invention, it will be manifest to those skilled in the art that various modifications and re-arrangements of the parts may be made without departing from the spirit and scope of the invention, and that the same is not limited to the particular forms herein shown and described, except in so far as indicated by the appended claims.

I claim:

1. The method of constructing a tile-faced wall which includes first applying to a backing member a plurality of vertically spaced, horizontally extending, parallel metallic strips of readily pliable material each several times as long as one of the tiles, and each having a portion secured flatly against the backing member and a flange extending upwardly and outwardly therefrom, assembling on one of said strips a row of tiles by placing them thereon, one at a time in their order in the row, and progressively bending downward the successive portions of an adjacent stip into holding engagement with the grooved upper edges of the tiles as each one is added to the row.

2. The method of constructing a tile-faced wall which includes first applying to a backing member a plurality of vertically spaced, horizontally extending, parallel metallic strips of readily pliable material each several times as long as one of the tiles, each having a portion secured flatly against the backing member and a flange extending upwardly at an obtuse angle therefrom, assembling on one of said strips a row of tiles by placing them thereon, one at a time in their order in the row, and bending successive portions of an adjacent strip progressively downward at an acute angle to the backing member into holding engagement with the grooved upper edges of the tiles as each one is added to the row.

3. The method of constructing a tile-faced wall as defined in claim 1, with the additional step of pressing the bent strip into final position by lodging thereon a second row of tiles having lower edges formed to inter-engage with the grooved upper edges of the first-mentioned row.

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