July 3, 1934. G. G. ELLITHORPE ET AL 1,965,282

BUILDING CONSTRUCTION

Filed Nov. 21, 1932 2 Sheets-Sheet 1

Fig. 1.

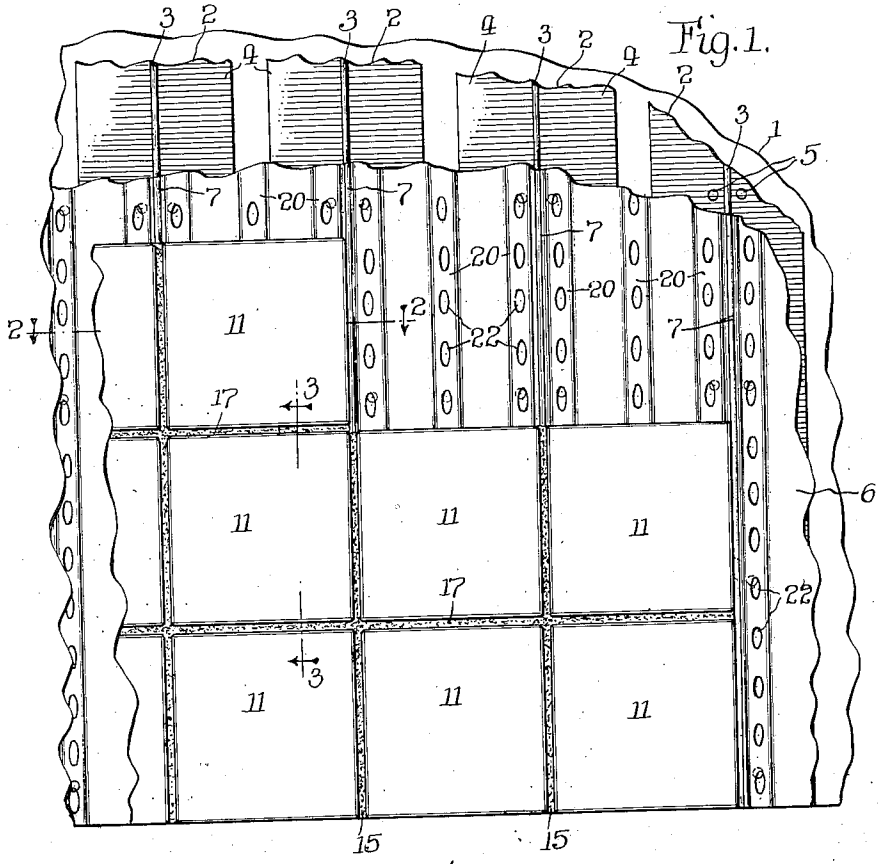


Fig. 2.

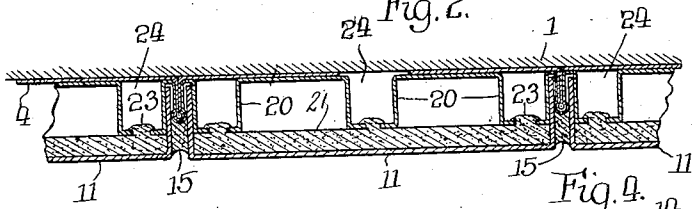


Fig. 3.

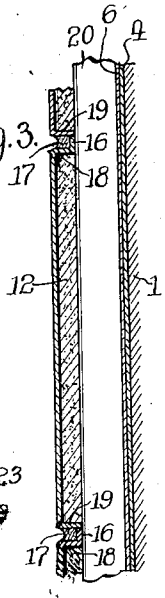


Fig. 4.

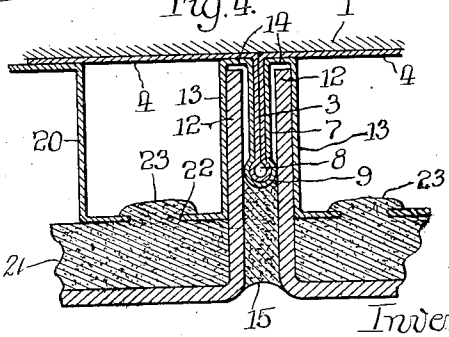
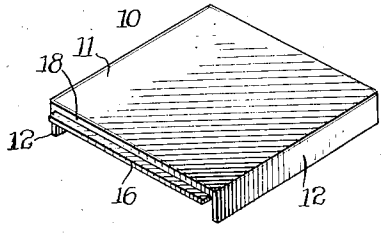


Fig. 5.



Inventors:
George G. Ellithorpe,
Clarence J. Menken,
By Churchill Parker & Carlson
Attys.

July 3, 1934. G. G. ELLITHORPE ET AL 1,965,282

BUILDING CONSTRUCTION

Filed Nov. 21, 1932 2 Sheets-Sheet 2

Fig.6.

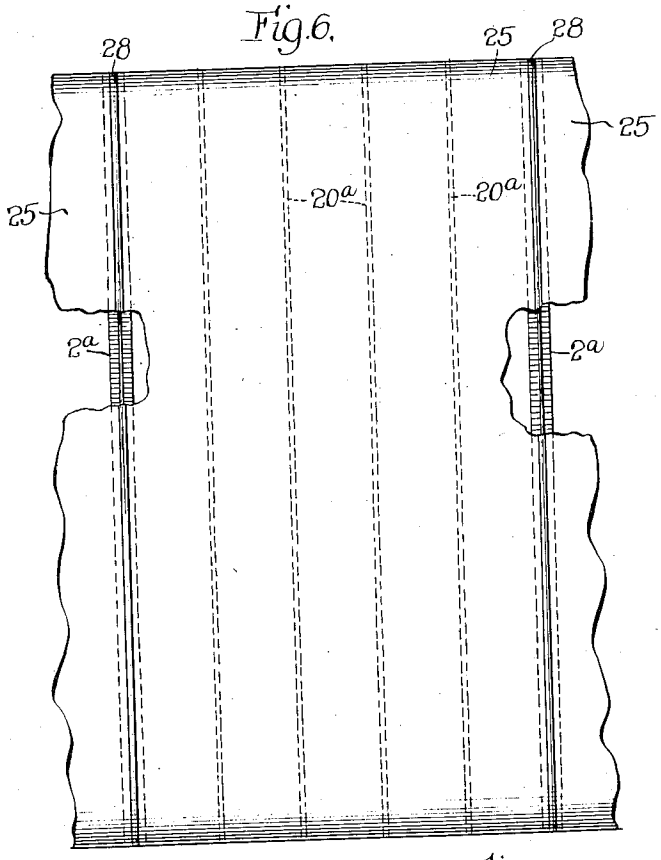


Fig.7.

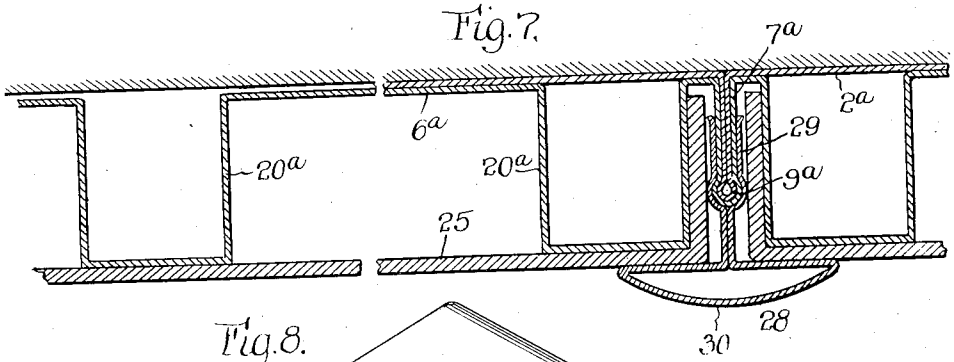
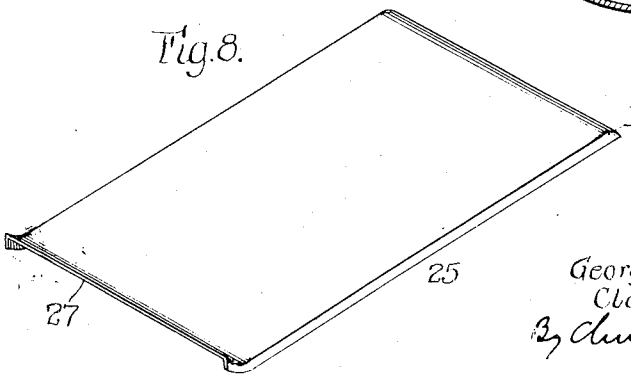


Fig.8.



Inventors:
George G. Ellithorpe,
Clarence J. Menhen,
By Archibald Parker Watson
Attys.

Patented July 3, 1934

1,965,282

UNITED STATES PATENT OFFICE

1,965,282

BUILDING CONSTRUCTION

George G. Ellithorpe and Clarence J. Menken,
Berwyn, Ill.

Application November 21, 1932, Serial No. 643,700

22 Claims. (Cl. 72—19)

This invention relates to means for constructing tiled surfaces and the like. Two embodiments of the invention are herein disclosed, one being particularly, although not exclusively, adapted for use in situations where there is moisture at the inner or outer sides of the wall, and the other being especially suitable for use in rented quarters and other places where it may be desirable to remove the tiling.

In the accompanying drawings Fig. 1 is a fragmental elevation of a wall illustrating one embodiment of our invention.

Fig. 2 is a section on line 2—2 of Fig. 1.

Fig. 3 is a section on line 3—3 of Fig. 1.

Fig. 4 is a section similar to Fig. 2, but on a larger scale.

Fig. 5 is a perspective view of one form of tile that may be used in this construction.

Fig. 6 is a fragmental elevation of a wall, showing another means of providing a tiled surface.

Fig. 7 is a fragmental horizontal section through the wall shown in Fig. 6.

Fig. 8 is a perspective view of a tile or panel employed in the system of tiling represented in Figs. 6 and 7.

Referring to Fig. 1: The basic or supporting structure 1 of the wall may be of wood, brick, hollow tile, stone or concrete or it may be a plastered wall or a metallic partition. To the structure 1 are secured a series of metallic supports 2 arranged in parallel vertical position. Each support 2 is herein shown as consisting of a piece of sheet metal bent to form a rib 3 of double thickness and attaching flanges 4 at opposite sides of the rib but it should be understood that the supports 2 may be constructed in other ways.

The supports 2 are attached to the structure 1 by means varying in character with the nature of the structure 1. In the case of hollow tile, the flanges 4 may be secured in place by means of expansion bolts or toggle bolts. Wood screws or toggle bolts may be used with a plastered wall, metal or machine screws with a metal partition, and expansion bolts with a concrete wall. The numeral 5 denotes in Fig. 1 any suitable fastening means.

Upon the supports 2 is mounted a foundation sheet 6 preferably formed of sheet metal bent to provide a series of channels 7 to fit upon the ribs 3. As best shown in Fig. 4, the rib 3 has a bead 8 at its outer edge. The channel 7 is of such dimensions that the sheet metal of which it is formed must yield to allow the channel to expand as it is slipped or forced onto the bead 8. At the bottom of the channel is an enlarged space 9 to receive the bead 8. It will be seen that after the sheet 6 has been pressed onto the ribs 3, it will be frictionally locked in place.

The sheet 6 is preferably of such height and width that it may support a multiplicity of tiles 10, which are preferably porcelain-enameled. The tiles may be constructed in various ways and of various sizes. In the present instance, each tile is of such width as to fill the space between two adjacent channels 7. As shown in Fig. 5, each tile is formed of sheet metal bent to provide a plate 11 having at its opposite vertical edges a right-angle flange 12. The sheet 6 is bent to provide a flange or web 13 adjacent to and coacting with the channel 7 to form a groove 14 to receive the flange 12.

It will be seen that the channels 7 serve to space the tiles apart horizontally sufficiently to produce vertical grooves or spaces to receive pointing or grouting material 15.

In order to produce similar horizontal grooves between the tiles, we form at one horizontal edge of the tile a flange 16 extending in a plane parallel with the face of the plate 11, but depressed sufficiently so as to be covered with grouting 17. The flange 16 is formed on a right-angle flange 18 on the tile and abuts against a right-angle flange 19 on the adjacent side of the adjacent tile, as shown in Fig. 3.

In order to provide a backing for the tiles and thus support them against flexure, the foundation sheet 6 may have vertical flat-topped ribs 20 formed thereon to underlie the flanges 18 and 19.

Preferably the tiles 10 are cemented to the foundation sheet 6. In practice the backs of the tiles are "buttered" with cement 21. When the tiles are pressed in place, some of the cement is forced through openings 22 in the ribs 20 in the form of "keys" 23.

It will be seen that the construction illustrated in Figs. 1 to 4 as having been applied to a wall or supporting structure is composed of metal and cement and is thus well adapted to withstand the effects of moisture. If desired, the supports 2 and the foundation sheet 6 may be rust-proofed by any of the methods commonly employed for that purpose. When installed in a tunnel or other location in which water may flow or drip down the walls, the hollow ribs 20 afford channels 24 for the water, suitable provision (not herein shown) being made at the bottom of the wall for drainage.

The mode of construction disclosed in Figs. 6, 7 and 8 is particularly well adapted to use in

retail establishments and other places where it is desirable that a tenant shall be able to tile the walls or other surfaces and remove the tiling in the event of a removal of the establishment to other premises. This construction comprises ribbed elements 2^a and a foundation sheet 6^a substantially similar to or identical with the corresponding parts previously described, but differs from that first described in that relatively large porcelain-enameled panels or sheets 25 are used instead of the relatively small tiles 10. Each panel may be of the same height as the completed wainscoting or other tiled surface to be constructed, and it may, if desired, be several feet wide. The upper edge of the panel may terminate in any preferred form, as a bull-nose 26, and the lower edge may, if desired, be curved to produce a cove 27.

A sufficient number of backing ribs 20^a are provided on the sheet 6^a to support the panel 25 against bending.

The construction shown in Figs. 6, 7 and 8 also differs from that of Figs. 1 to 4 in that no cement is used, the panels being attached in such a way as to facilitate their removal when desired. In the form herein shown, we employ a joint-covering and panel-securing strip 28 formed of sheet metal and comprising a clip or channel 29 adapted to be sprung over the bead 9^a and embrace the channel 7^a. The strip 28 further comprises a flange or web 30 that bridges the joint between two adjacent panels and overlaps said panels slightly. The strip 28 and its clip 29 may be of the same length as the height of the panels.

When removal becomes desirable, the strips 28 are first detached, then the panels 25 are pulled off the foundation sheet and then the foundation sheets 6^a are disengaged from the ribbed elements 2^a. The latter also may be removed, all of the tile-supporting construction being thus salvaged for use in another location except possibly some of the fastenings 5.

While we have described the present embodiments in considerable detail, it will be understood that various changes may be made without departing from the scope of the invention as set forth in the appended claims.

The term "wall" is used herein, for the sake of brevity, to denote any surface to be tiled, except where the context requires a more specific meaning.

We claim as our invention:

1. A tiled wall comprising a supporting structure, a plurality of ribbed elements secured to the structure in parallel relation, a sheet-metal foundation sheet having means to engage the ribs of said elements, said sheet having two parallel grooves therein, and porcelain-enameled sheet-metal means extending across the space between said grooves and having flanges lying in said grooves.

2. A tiled wall comprising a supporting structure, a sheet-metal foundation sheet secured to said structure and having grooved portions, a plurality of sheet-metal tiles having flanges on two opposite edges to enter the grooves, whereby the tiles are spaced apart, said tiles also having spacing means on the other edges, and grouting in the spaces between the tiles.

3. A tiled wall comprising a supporting structure, ribbed elements secured to the structure in parallel relation, a foundation sheet having means to engage the ribs of said elements, said sheet having grooves, and a plurality of sheet-metal tiles having flanges on two opposite edges to enter said grooves, whereby the tiles are spaced apart, said tiles also having spacing means on the other edges, and grouting in the spaces between the tiles.

4. A tiled wall comprising a supporting structure, ribbed elements secured to the structure in parallel relation, a foundation sheet having means to engage the ribs of said elements, said sheet having grooves, and a plurality of tiles having portions on two opposite edges to enter said grooves, whereby the tiles are spaced apart, said tiles also having spacing means on the other edges, and grouting in the spaces between the tiles.

5. A tiled wall comprising a supporting structure, ribbed elements secured to the structure in parallel relation, a foundation sheet having means to engage the ribs of said elements, said sheet having grooves and a plurality of tiles having portions on two opposite edges to enter said grooves, whereby the tiles are spaced apart, and grouting in the spaces between the tiles.

6. A tiled wall comprising a supporting structure, ribbed elements secured to the structure in parallel relation, a sheet-metal foundation sheet having channels to fit over and frictionally engage the ribs of said elements, each of said ribs having a terminal bead and each of said channels being adapted to be forced over said bead and having an enlarged space to receive the bead, and a plurality of sheet-metal tiles filling the space between two adjacent channels, said sheet having grooved portions alongside the channels, and the tiles having flanges on two opposite edges to enter said grooves, whereby the tiles are spaced apart, said tiles also having spacing means on the other edges, and grouting in the spaces between the tiles.

7. A tiled wall comprising a supporting structure, ribbed elements secured to the structure in parallel relation, a sheet-metal foundation sheet having means to engage the ribs of said elements, and a plurality of sheet-metal tiles secured to said sheet.

8. A tiled wall comprising a supporting structure, ribbed elements secured to the structure in parallel relation, a sheet-metal foundation sheet having channels to fit over the ribs of said elements, and a plurality of tiles, said sheet having grooved portions alongside the channels, and the tiles having flanges on two opposite edges to enter said grooves, whereby the tiles are spaced apart, said tiles also having spacing means on the other edges.

9. A tiled wall comprising a supporting structure, ribbed elements secured to the structure in parallel relation, a foundation sheet having channels to engage the ribs of said elements, said sheet having grooved portions alongside the channels, and a plurality of sheet-metal tiles having flanges on two opposite edges to enter said grooves, whereby the tiles are spaced apart, said tiles also having spacing means on the other edges, and grouting in the spaces between the tiles.

10. A tiled wall comprising a supporting structure, ribbed elements secured to the structure in parallel relation, a sheet-metal foundation sheet having channels to fit over the ribs of said elements, and a plurality of sheet-metal tiles each extending across the space between two adjacent channels, said sheet having grooved portions alongside the channels, and the tiles having flanges on two opposite edges to enter said

grooves, whereby the tiles are spaced apart, and grouting in the spaces between the tiles.

11. A tiled wall comprising a supporting structure, ribbed elements secured to the structure in parallel relation, a sheet-metal foundation sheet having channels to fit over the ribs of said elements, and a plurality of sheet-metal tiles each extending across the space between two adjacent channels and cemented to the sheet, said sheet having grooved portions alongside the channels, and the tiles having flanges on two opposite edges to enter said grooves.

12. A rectangular sheet-metal tile having attaching flanges at two opposite edges, narrower flanges at the other edges, and a spacing element on one of the narrower flanges adapted to abut against the other narrow flange of a similar adjacent tile to space said tiles apart.

13. A building construction comprising a supporting structure, a plurality of ribbed elements arranged in parallel relation on the structure, a foundation sheet having means to engage the ribs of said elements, said sheet having parallel grooves therein, a panel having flanges fitting into said grooves, means on the sheet to support the panel against flexure at points between said flanges, and means to close the joint between two adjacent panels, said last-mentioned means being arranged frictionally to engage the rib-engaging means of said sheet.

14. A building construction comprising a supporting structure, a plurality of ribbed elements arranged in parallel relation on the structure, a foundation sheet having means to engage the ribs of said elements, said sheet having parallel grooves therein, panels having flanges fitting into said grooves, means on the sheet to support the panels against flexure at points between said flanges, and a removable metallic strip to close the joint between two adjacent panels, said strip being arranged frictionally to engage the rib-engaging means of said sheet.

15. A building construction comprising a supporting structure, a plurality of ribbed elements arranged in parallel relation on the structure, a foundation sheet having means to engage the ribs of said elements, said sheet having parallel grooves therein, panels having flanges fitting into said grooves, means to support the panels against flexure at points between said flanges, and means to close the joint between two adjacent panels.

16. A building construction comprising a supporting structure, a plurality of ribbed elements arranged in parallel relation on the structure, a foundation sheet having means to engage the ribs of said elements, said sheet having parallel grooves therein, panels having flanges fitting into said grooves, and a metallic strip to close the joint between two adjacent panels, said strip being arranged frictionally to engage the rib-engaging means of said sheet.

17. A detachable building construction comprising a supporting structure, a foundation sheet frictionally secured to the structure, said sheet having parallel vertical grooves therein, panels having flanges on opposite vertical edges fitting into said grooves, and means to cover the joint between two adjacent panels, said last-mentioned means being arranged frictionally to engage within the groove between two panels.

18. A detachable building construction comprising a supporting structure, a foundation sheet detachably secured to said structure, said sheet having parallel grooves therein, panels having flanges fitting detachably into said grooves, and a metallic strip to close the joint between two adjacent panels, said strip being detachably secured within the groove between two sheets.

19. In metallic building construction, two sheet-metal panels having flanges on adjacent but separated edges, and detachable means to bridge the space separating the panels, said means comprising a metallic strip overlying the adjacent portions of the panels and having an attaching portion extending into and frictionally secured in the space between the panels.

20. In metallic building construction, two sheet-metal panels having flanges on adjacent but separated edges, means on which the panels are detachably mounted, and a strip overlying the adjacent portions of the panels and having an attaching portion extending into the space between the panels, said means having an element extending into said space and with which said attaching portion is frictionally engaged.

21. In a wall, the combination of a supporting structure, a plurality of elongated elements secured to said structure and extending in parallel relation along the face of said structure, and a foundation sheet supported by said elements, said elements and sheet having interengaging members which frictionally lock the sheet in place.

22. In a wall, the combination of a supporting structure, a plurality of elements secured to said structure in spaced relation, and a foundation sheet having a plurality of metallic parts which may be sprung into engagement with said elements to support the sheet.

GEORGE G. ELLITHORPE.
CLARENCE J. MENKEN.

CERTIFICATE OF CORRECTION.

Patent No. 1,965,282. July 3, 1934.

GEORGE G. ELLITHORPE, ET AL.

It is hereby certified that error appears in the printed specification of the above numbered patent requiring correction as follows: Page 3, line 81, claim 17, after "construction" insert the words employing no mortar or other adhesive and; and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 7th day of August, A. D. 1934.

Leslie Frazer

Acting Commissioner of Patents.

(Seal)