Sept. 6, 1938. H. E. VOEGELI 2,128,976

METAL WALL FACING

Filed Oct. 9, 1936

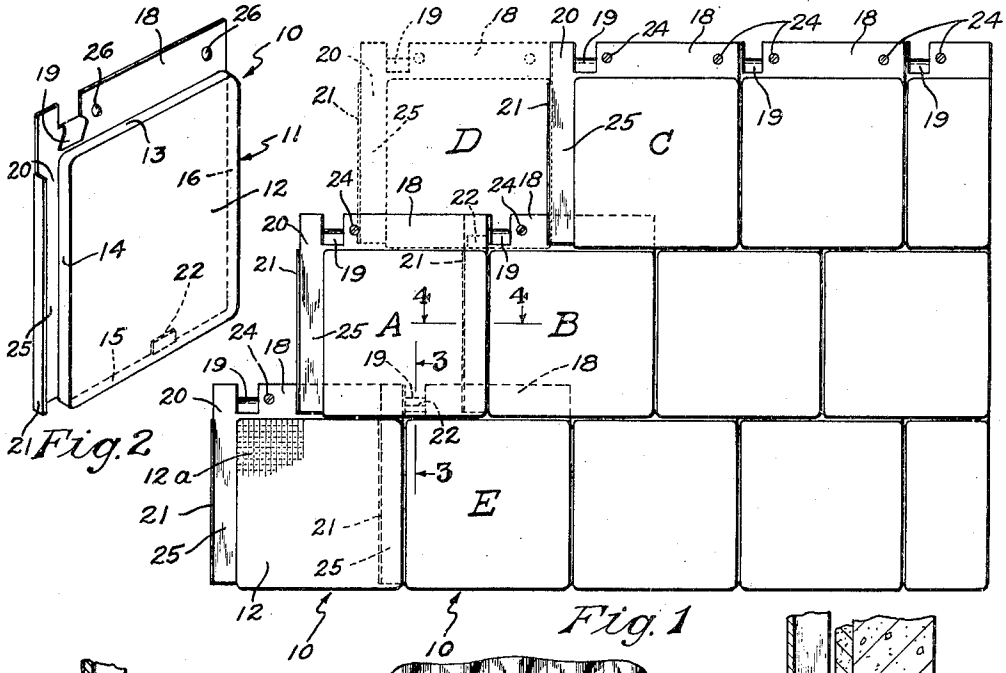


Fig. 2

Fig. 1

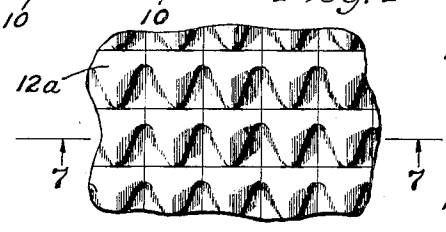


Fig. 6



Fig. 7

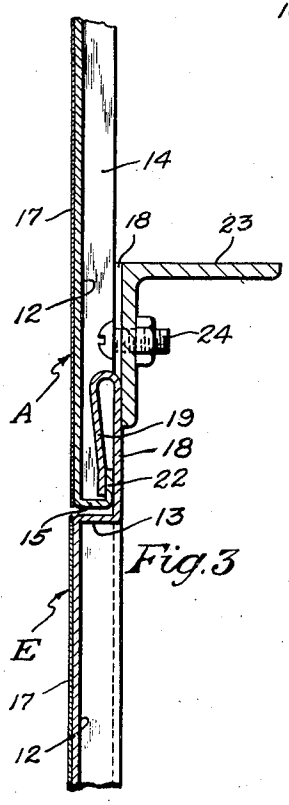


Fig. 3

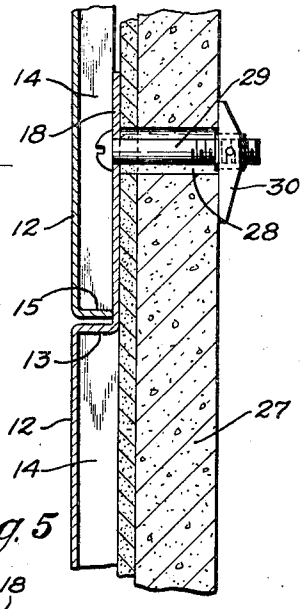


Fig. 5

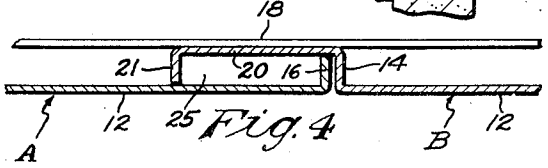


Fig. 4

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METAL WALL FACING

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9 Claims. (Cl. 189—86)

This invention relates to new and useful improvements in wall coverings or facings, and has particular relation to a metal wall facing.

An object of the invention is to provide a metal wall facing which may be applied without the use of mortar, and which owing to its construction is weatherproof and does not require the use of calking compounds and the like.

Another object is to provide an improved panel or tile for the assembling of a wall facing having the characteristics above outlined.

Other objects and advantages will become apparent from a consideration of the following detailed description taken in connection with the accompanying drawing wherein a satisfactory embodiment of the invention is shown. However, it is to be understood that the invention is not limited to the details disclosed but includes all such variations and modifications as fall within the spirit of the invention and the scope of the appended claims.

In the drawing:

Fig. 1 is an elevational or front view showing a fragment of a facing according to the present invention;

Fig. 2 is an isometric view of one of the panels of the invention;

Fig. 3 is an enlarged sectional view taken substantially along the line 3—3 of Fig. 1;

Fig. 4 is a similar view taken substantially along the line 4—4 of Fig. 1;

Fig. 5 is a view somewhat similar to Fig. 3 but showing a modified form of fastening means;

Fig. 6 is an enlarged elevational view of a portion of the face of one of the panels, the same being cross-crimped; and

Fig. 7 is a sectional view taken substantially along the line 7—7 of Fig. 6.

The use of metal for the outside facing of buildings is increasing as it has many advantages, the metal being used in panels either covered with a vitreous enamel or uncovered. In some cases the joints are made weathertight by means of calking compounds, but experience has shown that structural joints on the face of a building that are made weathertight with calking compounds are not permanent or reliable. When the calking dries out it begins to "rope" and fall away from its position, and when it does this it is likely to trap or form a pocket which will feed water to the back side of the wall facing which, of course, would be an undesirable and serious matter.

Another method is to set the metal tile or panel in mortar in the same manner as is customarily done with clay tile. This method however is limited to relatively small tile, probably not much greater than 6" x 6" or possibly 8" x 8", as above about these sizes the difference in expansion of the metal of the tile and the mortar causes the tile to loosen up, and with action of frost to fall away from its position.

With the object of overcoming these objections I have devised a wall and tile construction using stamped metal panels which can be applied to a solid sheathed backing, or to a lattice work of metal or other horizontal furring strips, or backings of other construction, without the use of mortar, and weathertight without using calking materials.

Referring in detail to the drawing the improved metal wall facing is made up of sheet metal panels 10 stamped or pressed to shape, each of which as shown best in Fig. 2 comprises a hollow body 11 including a front wall 12 and side walls 13, 14, 15 and 16. The outer surface of the front wall 12 may be left plain or it may be enameled or otherwise treated as desired. In Fig. 3 one such wall is shown enameled as at 17. In place of enamel or other coating the said front walls of the panels may be cross-crimped as are the wall portions 12a in Figs. 6 and 7. This cross-crimping serves to break up the face of the panel adding to its appearance and preventing objectionable light reflections which might occur from large plain surfaces of the panel.

An extension or flange 18 projects vertically from the inner edge of the wall 13, and toward one vertical edge has a portion lanced therefrom and bent forwardly to provide a clip 19, the purpose of which will later appear. From the inner edge of the wall 14 there projects a lateral extension 20 at the free edge of which a flange 21 is directed forwardly. An upwardly directed lug 22 is carried by the inner edge of the lower side wall 15 and cooperates with the clip 19 of an adjacent panel in the assembly of the panels on the face of a wall of a building to hold the tile or panel in place.

The facing of the invention may be applied to the walls of bathrooms, laundries, breweries, dairy plants, etc., as well as to the fronts or other exterior surfaces of stores or other buildings. These panels could be applied to a solid sheathed backing or to a latticework of metal or other horizontal furring strips. In Fig. 3 the panels are applied to horizontally disposed suitably spaced angle bars 23 being attached by bolts 24.

On the face of a wall being covered the panels

are arranged in horizontal rows. The vertical joints between the panels of one row are in staggered relation to the same joints of the panels of the next upper and lower rows. In the completed facing the extensions 20 with their flanges 21 form channels 25 within the vertical joints as shown best in Fig. 4. The front side of this channel is closed by the overlapped wall of the next adjacent panel. In like manner the vertical extensions 18 of the panels provide means to intercept the moisture moving downwardly through such channels 25 and direct it outwardly onto the faces of the panels, as it will be seen from Fig. 1, that the lower ends of these channels are each located at the front of the upper extension 18 of the next lower tile or panel and below the upper edge of this extension.

The manner of applying the panels may be best described with reference to the panels lettered A, B, C and D in Fig. 1. Panel B has been secured to the wall member or angle bar 23 as by passing the bolts 24 through the openings 26 provided for that purpose in the vertical extension 18 of the panel. Next the wall 16 of the panel A is disposed in the channel 25 formed by the extension 20 and flange 21 of the panel B and with the wall 16 adjacent flange 21, and then the panel A is moved laterally to the right to bring its wall 16 against the wall 14 of panel B. This movement slides lug 22 on panel A under clip 19 on panel E. Thereafter fastenings 24 are passed through the openings 26 in the vertical extension 18 of panel A.

Next panel C may be applied in the same manner and it is disposed with its channel 25 over an intermediate portion of the upper wall 13 of the panel B and with extension 20 in front of extension 18 of panel B so that such channel does not align with the vertical joint between the panels A and B. Bolts or other fastening means 24 are now passed through the openings 26 in the extension 18 of panel C and then panel D is applied as part of the wall facing.

Panel D indicates how the panels are applied. A panel is first applied in the dotted line position which locates its wall 16 within the channel 25 of panel C with such wall 16 close to the inner side of the flange 21 of such channel. This locates the lug 22 of panel D at one side of the clip 19 of panel B. Now the panel D is shifted laterally or edgewise toward the panel C. This brings the wall 16 of panel D against the wall 14 of panel C and closing the outer side of the channel 25, and it also brings the lug 22 of panel D under the clip 19 of panel C. Thus the lower edge of panel D is secured and thereafter by means of the bolts 24 or other means passed through the openings 26 of its extension 18 the upper edge of panel D is secured in place.

It will thus be understood that the upper edge of each panel of a wall facing is secured by means of the bolts 24 or otherwise and that the lug 22 at the lower edge of each panel interlocks with the clip 19 of a panel of a lower horizontal row of panels. In this way all of the panels of a facing are permanently secured in place on a wall without the use of mortar or the like. The extensions 20 and flange 21 of each panel provide the channel 25 within the vertical joint between such panel and the next adjacent panel of a row, and the outer side of this channel is closed by the overlapping wall of this next adjacent panel of the same row.

Such channels collect any moisture entering between the adjacent side walls of a pair of panels and carry such moisture downwardly, discharging it onto the intermediate portion of the upper side wall 13 of a lower panel and in front of the extension 18 of this panel. Such wall 13 directs the moisture outwardly onto the face of its panel. Thus a weathertight construction is provided without the use of calking compounds or the like. Owing to the manner in which the panels are mounted they are free to expand and contract relatively due to heat and cold and yet are so secured that they will not become loose and fall away from the building. There is no danger of breaking or cracking the panels in handling. The size of the panels is limited only by economical gauges of metal and by the character of stiffening or embossing of the panel facing.

The panels may be backed with "Transite", "Masonite", or other rigid wall board of low moisture absorption and having heat insulating and noise deadening properties, behind which could be the wall framing of steel or other material, the spaces between the framing members being filled with insulation. A wall facing as described, whether enameled or plain, when measured in terms of the ordinary life of a building, should be permanent, sanitary, easy to maintain, rich in appearance, and the construction will be safe in all kinds of inclement weather.

The particular means by which the panels are secured to the wall of a building is not important. Fig. 5 suggests the securing of the panels to a masonry wall 27. As shown the wall is provided with openings 28 and toggle bolts 29 are used for fastening the panels to such wall. These bolts 29 are passed through the openings 26 in the vertical extension 18 of the panels and then through the openings 28 of the masonry wall. The tie portions 30 of the bolts drop down to extend transversely of the openings 28 at the inner side of the wall 27 and then the bolts are tightened to secure the panels in place.

Having thus set forth the nature of my invention, what I claim is:

1. A panel for a sheet metal wall facing comprising a hollow body including front and side walls, lateral extensions projecting from the inner edges of an adjacent pair of said side walls, a clip at the forward side of the first of said extensions, a forwardly directed flange along the free edge of the second of said extensions, and a lug on the inner edge of the side wall opposite the side wall having the first extension.

2. A panel for a sheet metal wall covering comprising a hollow body including front and opposite side walls, a lateral extension projecting from the inner edge of one of said side walls, a clip at the forward side of said extension, and a lug on the inner edge of the other of said side walls.

3. In a wall facing, a pair of sheet metal panels each including a hollow body comprising a front wall and side walls extending rearwardly from said front wall, a lateral extension on the inner edge of a side wall of one panel, a forwardly directed flange on the free edge of said extension, the other of said panels overlying said extension and receiving said flange with one of its side walls on said extension and in opposing parallel relation to the flange, a third sheet metal panel below said pair of panels and including a hollow body comprising a front wall in the plane of the front walls of the first panels, a side wall having an intermediate portion at the lower ends of the overlapping portions of the first panels, and a vertical extension on the rear edge of said side wall and extending upwardly at the rear sides of

the adjacent lower edge portions of the pair of panels.

4. In a wall facing, a pair of sheet metal panels arranged vertically one above the other, one of said panels including a front wall and an upper side wall, the other of said panels including a front wall and a lower side wall, a vertical extension on said upper side wall, a clip at the forward side of said extension, and a lug on said lower side wall and interlocked with said clip.

5. In a wall facing, a series of sheet metal panels arranged in horizontal rows disposed vertically one above the other, each of said panels including a hollow body portion comprising a front wall and side walls, a lateral extension on the inner edge of a vertical side wall of each panel, a forwardly directed flange on the free edge of each of said extensions, each of said extensions being disposed under the adjacent edge portion of the next adjacent panel of the row, and an upward extension on the inner edge of the upper horizontal side wall of each panel located at the rear of the lower end portion of the lateral extension on the adjacent panel in the next upper row.

6. In a wall facing, a series of sheet metal panels arranged in horizontal rows disposed vertically one above the other, each of said panels including a hollow body portion comprising a front wall and side walls, the panels of said rows being so arranged that the vertical joints between the panels of one row are above the intermediate portions of the panels of the next lowermost row, means forming channels at the inner sides of each of said vertical joints, and an upward extension on the upper edge of each panel located at the rear of the lower end portion of a channel in the next upper row.

7. In a wall facing, a pair of sheet metal panels each including a hollow body comprising a front wall and side walls extending rearwardly from said front wall, a lateral extension on the inner edge of a side wall of one panel, a forwardly directed flange on the free edge of said extension, the other of said panels overlying said extension and receiving said flange with one of its side walls on said extension and in opposing parallel relation to the flange, a third sheet metal panel below said pair of panels and including a similar hollow body to that of the first panels, said third panel including a side wall having an intermediate portion at the lower ends of the overlapping portions of the first panels, and a vertical extension on the rear edge of said side wall and extending upwardly at the rear sides of the adjacent lower edge portions of the pair of panels.

8. A wall facing comprising a series of sheet metal panels arranged in horizontal rows disposed one above the other, adjacent panels in the rows each including a hollow body comprising a front wall and side walls extending rearwardly from said front wall, a lateral extension on the inner edge of an upright side wall of said panel, a forwardly directed flange on the free edge of said extension, the other of said panels overlying said extension and receiving said flange with one of its side walls on said extension and in opposing parallel relation to the flange, an upward extension on the upper side walls of the panels located behind the lateral extensions of the panels on the next upper row, and connections between the lower portions of the panels of one row and the upper portions of the panels of the next lowermost row.

9. In a wall facing, a series of sheet metal panels arranged in horizontal rows disposed vertically one above the other, each of said panels including a hollow body portion comprising a front wall and side walls, a lateral extension on the inner edge of a vertical side wall of each panel, a forwardly directed flange on the free edge of each of said extensions, each of said extensions being disposed under the adjacent edge portion of the next adjacent panel of the row, an extension on the upper side wall of each panel, means passing through such extensions and securing the panels to a building wall, the hollow body portions of adjacent panels being disposed over and covering said extension, and connections between the lower portions of the panels of one row and the upper portions of the panels of the next lowermost row.

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