Dec. 21, 1943. A. M. BURDON-COOPER 2,337,180

TILED WALL FACING

Filed April 25, 1940 2 Sheets-Sheet 1

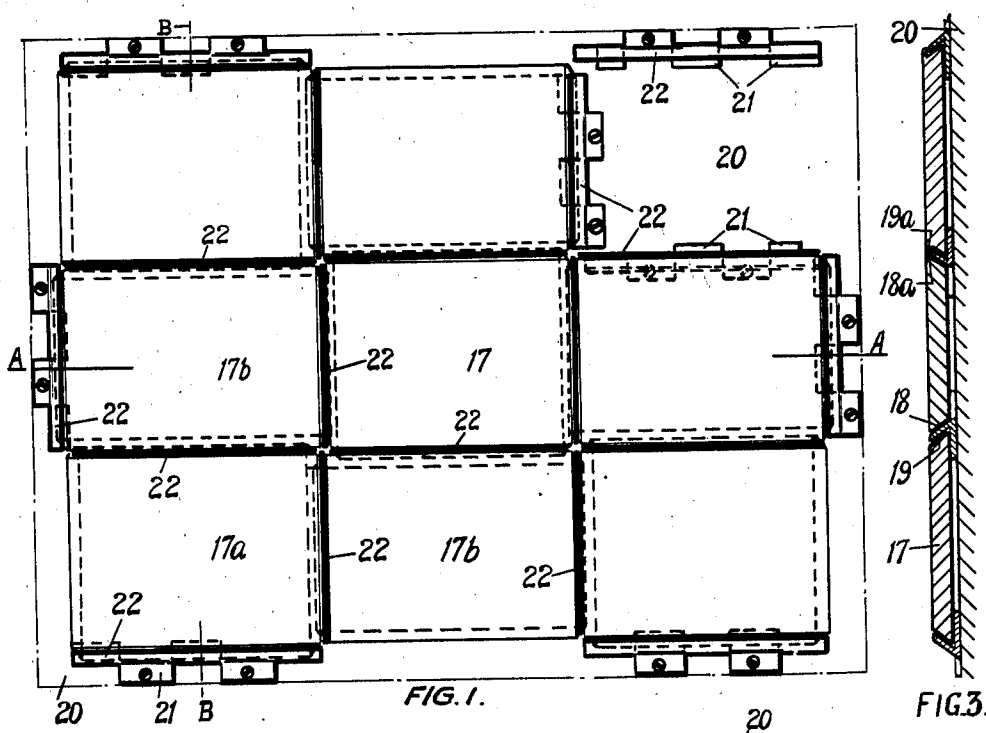


FIG. 1.

FIG. 3.

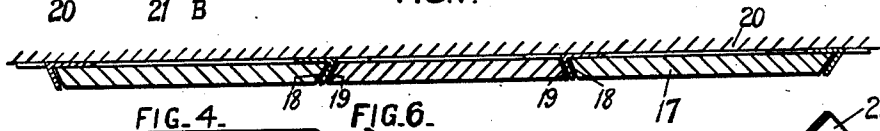


FIG. 2.

FIG. 4.

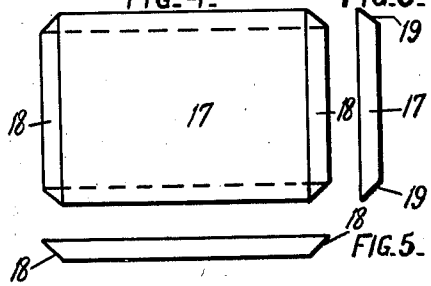


FIG. 6.

FIG. 5.

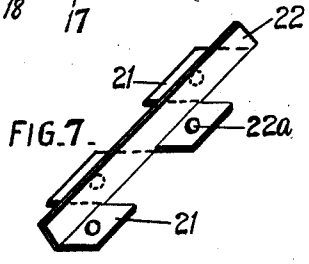


FIG. 7.

FIG. 8.

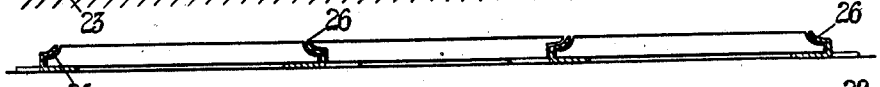


FIG. 9.

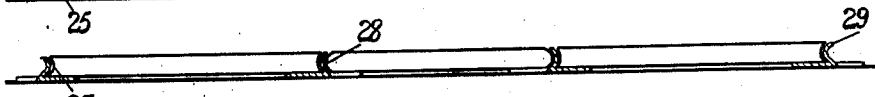


FIG. 10.

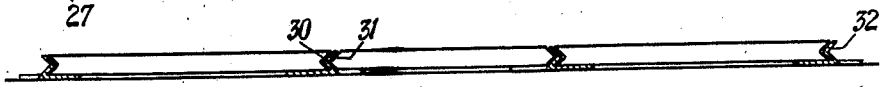


FIG. 11.

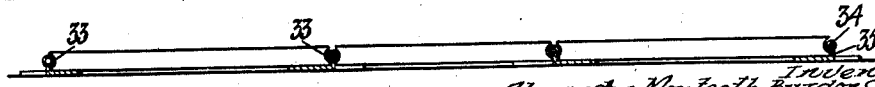


FIG. 12.

Inventor
Alexander Monteath Burdon Cooper
By Williams, Bradbury & Hinkle Attys.

Dec. 21, 1943. A. M. BURDON-COOPER 2,337,180

TILED WALL FACING

Filed April 25, 1940 2 Sheets-Sheet 2

FIG. 13.

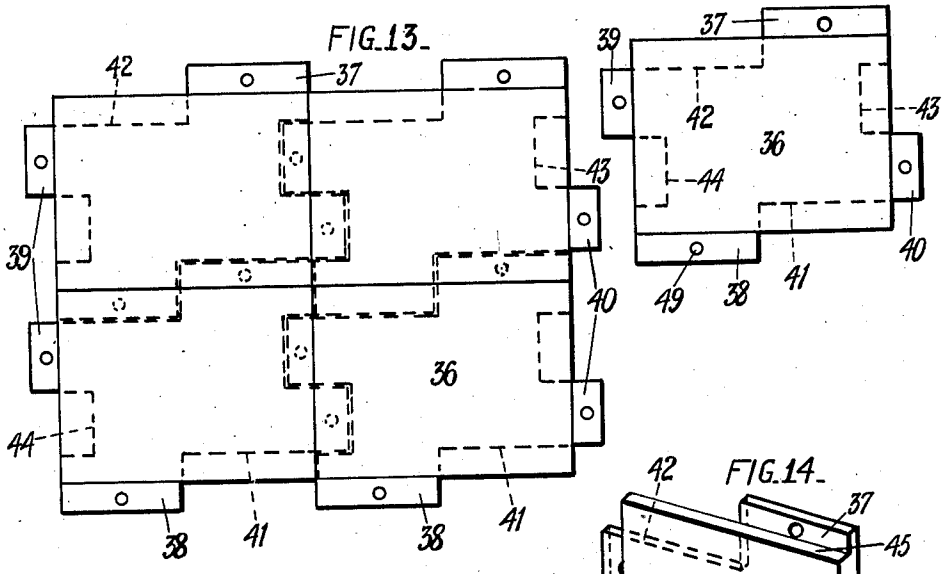


FIG. 14.

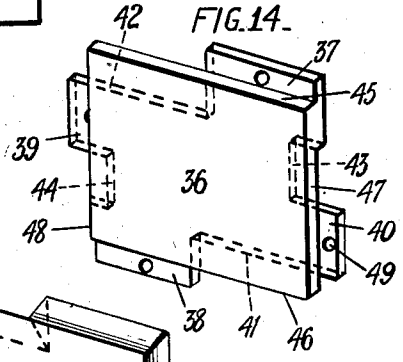
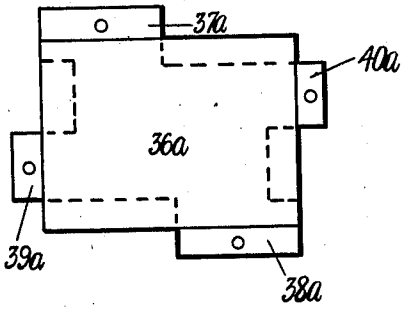


FIG. 15.



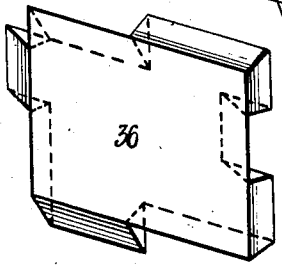
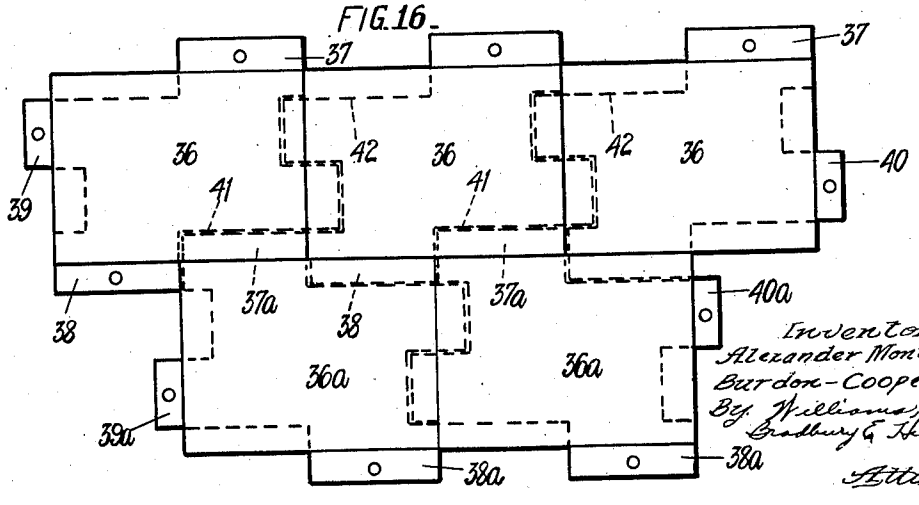


FIG. 17.

FIG. 16.



Inventor
Alexander Monteath
Burdon-Cooper
By Williams, Bradbury & Hinkle
Attys.

Patented Dec. 21, 1943 2,337,180

UNITED STATES PATENT OFFICE

2,337,180

TILED WALL FACING

Alexander Monteath Burdon-Cooper,
Comrie, Scotland

Application April 25, 1940, Serial No. 331,554
In Great Britain June 29, 1939

3 Claims. (Cl. 72—19)

This invention relates to tiled wall facings and to facing tiles therefor and is particularly concerned with the facing of walls without the use of cement for securing the facing tiles to the backing.

One of the objects of the invention is to provide a means of securing the tiles in position by the use of concealed fixing elements.

My invention contemplates the use of relatively large vitreous tiles of glass, glazed ceramic materials or the like cut to size and finished at the edges by grinding, or the tiles may be formed from glass, glazed ceramic materials, artificial resin or other material formed by pressing or moulding in a tile press or moulding machine.

According to the present invention every facing tile has each of its edges of complemental form to its opposite edge and the tiles are adapted to be assembled edge to edge with each edge of every tile in juxtaposed relationship to an edge of complemental form on an adjacent tile.

In a specific form of my invention the wall facing comprises a plurality of rectangular tiles adapted to be assembled edge to edge and to be laid in horizontal courses with the vertical joints in line, the tiles being secured to the wall or other backing by the use of concealed fixing elements, one between each pair of juxtaposed edges of adjacent tiles. Each fixing element comprises coplanar fixing flanges extending laterally from the base of a web which is shaped to overhang its base at one side of the web and each of the tiles has its edges shaped to interlock with the webs of the fixing elements.

My invention further contemplates the provision of a rectangular facing tile having all its edges beveled at the same angle, two opposite edges being beveled at an acute angle to the back of the tile and its other two edges being beveled at an acute angle to the front of the tile, for use in combination with fixing elements having their webs inclined at the same angle as the beveled edges of the tiles, so that each tile is held in position by two fixing elements, alternate tiles having their vertical edges overlapped by the webs of fixing elements and the intervening tiles having their horizontal edges overlapped by the webs of fixing elements. Thus each tile is gripped by two parallel fixing elements, the tiles being gripped alternately along their vertical and horizontal edges.

Other objects and advantages of the invention will be apparent by reference to the accompanying explanatory drawings whereon Fig. 1 is a face view of a tiled wall construction according to the preferred form of my invention, Figs. 2 and 3 being sectional views on the lines A—A and B—B respectively of Fig. 1.

Figs. 4, 5 and 6 are respectively a face view, edge plan and edge elevation of the beveled tile.

Fig. 7 is a perspective view of one of the fixing elements.

Figs. 8 to 12 are edge plan views illustrating alternate shapes of facing tiles and fixing elements.

Fig. 13 is a face view of an alternative form of tiled wall construction showing one of the tiles detached therefrom.

Fig. 14 is a perspective view of one of the tiles used in the facing illustrated in Fig. 13.

Fig. 15 is a front elevational view of a tile which is of reverse formation to that shown in Figs. 13 and 14.

Fig. 16 illustrates a tiled wall construction in which the vertical joints of one course break joint with those of the next course, this construction being obtained by the use alternately of tiles according to Fig. 14 in one course and tiles according to Fig. 15 in the next course. Fig. 17 is a perspective view of a form of tile alternative to those shown in Figs. 13 to 16.

Referring to Figs. 1 to 7, the tiles there shown are rectangular slabs 17 of glazed ceramic ware, glass, artificial resin or other material cut to rectangular shape and having the edges subsequently finished by grinding. The front surfaces of the tiles may have a smooth finish or may be given any desired decorative finish. Each tile has all its edges beveled at the same angle, two opposite edges 18 making an acute angle with the back of the tile and the other two edges 19 making an acute angle with the face of the tile. Thus it will be seen that any two contiguous edges 18 and 19 of a tile are of complemental form to one another.

The tiles are adapted to be assembled together, as clearly seen from Figs. 1–3, so that each edge of every tile (except of course the edges which outline the wall facing) will be in juxtaposed relation to a tile edge of complemental form, that is to say, each edge 18 of one tile will be alongside an edge 19 of an adjacent tile. Obviously it is necessary that each tile be of complemental form to its neighbour in that one set of tiles will have its horizontal edges bevelled to make an acute angle with the face of the tile and its vertical edges conversely formed, while the other set of tiles will have its horizontal edges

bevelled to make an acute angle with the back of the tile and its vertical edges conversely beveled.

For anchoring the tiles to the wall or backing 20 there is provided a plurality of fixing elements, one of which is shown in perspective in Fig. 7. These fixing elements are made in lengths corresponding to the lengths of the sides of the tiles and are conveniently formed from strip metal cut transversely at intervals to enable flanges or lugs 21 to be bent alternately in opposite directions into coplanar relation, leaving an upstanding web 22, the lugs 21 being bent at such an angle to the web 22 that the latter makes the same angle to the coplanar lugs 21 as the angle of bevel of the tiles. The lugs 21 are preferably formed with nail or screw holes 22*a*.

To fix the tiles in position, each tile is slid between a pair of parallel fixing elements. Referring to Fig. 1, the tile 17*a* has its horizontal edges gripped between a pair of horizontal fixing elements, the webs 22 of which overlie the horizontal edges of the tile, while one of the vertical edges of the tile 17*a* overlies the sloping web 22 of a vertically disposed fixing element. It will of course be understood that the webs 22 are fixed in position by nailing or screwing the lugs 21 to the wall or other backing. The two adjacent tiles 17*b* are of complemental form to the tile 17*a* and have their vertical edges beneath overlying webs 22, while their horizontal edges overlie the webs 22 of the horizontal fixing strips. Thus it will be seen that the tiles are held in position by the anchoring of their horizontal and vertical edges alternately. As the webs 22 can be made of relatively thin metal strip and fit closely between the juxtaposed edges of adjacent tiles, the webs 22 are almost entirely concealed from view while firmly anchoring the tiles to the wall or other backing. Obviously the webs 22 could be completely concealed from view by forming either or both juxtaposed edges of abutting tiles with an overhanging lip as at 18*a* and 19*a* in Fig. 3.

Instead of forming the tiles with beveled edges, I may form the tiles with rebated edges 23 as in Fig. 8, in which case the fixing elements have correspondingly shaped webs 24, or I may make the tiles with curved edges 25 as in Fig. 9, the webs 26 of the fixing elements being correspondingly curved. Fig. 10 illustrates a slightly modified form in which the tiles have concave edges 27 and rounded edges 28 between which a fixing element having a concavo-convex web 29 is fitted, or as shown in Fig. 11 the tiles may have angularly recessed edges 30 and complementary angularly beveled edges 31 engaging opposite sides of a V-shaped web 32.

Fig. 12 illustrates a further modification in which each tile has a groove or recess 33 in each edge, thereby forming a cavity between adjoining tiles for the reception of an enlarged head 34 on the web 35 of the fixing element.

It will be observed that in the constructions according to Figs. 10–12, each tile is firmly anchored along all four of its edges by the fixing element. It is to be understood that the forms of my invention shown in Figs. 1–12 are given only as examples and that the shape of the edges of the tiles and of the corresponding fixing elements are capable of variation in form within the scope of the appended claims.

Referring now to the form of my invention shown in Figs. 13 to 16, each tile 36 is of rectangular form and is a pressed or moulded tile formed with a single projection on and a single recess in each edge. The projections 37, 38, 39 and 40 are of less thickness than the thickness of the tile and the back of each projection is flush with the back of the tile. The recesses 41, 42, 43 and 44 are formed in the back of the tile. Recess 41 is opposite the projection 37 in the opposite edge, recess 42 is opposite projection 38, recess 43 is opposite projection 39 and recess 44 is opposite projection 40. Each recess has the same width, depth and thickness as the projection opposite to it. The projections 37 and 38 have a width equal to half the length of the edges 45 and 46 of the tile and the recesses 41 and 42 are of similar width. One side edge of the projection 37 is flush with the side edge 47 of the tile and the projection 38 has one side edge flush with the side edge 48 of the tile. The projections 39 and 40 are of narrower width than the projections 37 and 38, the projection 39 having one side edge in line with the base of the recess 42 and the projection 40 having one side edge in line with the base of the recess 41. Each projection 37—40 may have screw or nail holes 49 for enabling the tile to be nailed or screwed to the wall or other backing.

On reference to Fig. 13 it will be apparent that a plurality of tiles all of the form shown in Fig. 14 may be interlocked with one another without the use of intermediate fixing elements. To assemble the tiles, the first one is fixed to the wall or other backing by nails or screws passed through two of the projections 37—40, after which the tiles can be assembled edge to edge and interlocked with one another by engaging the projections 39 and 40 of the tiles with the recesses 43 and 44 respectively of the neighbouring tiles in the same course and by engaging the projections 37 and 38 of the tiles with the corresponding recesses 41 and 42 of the tiles of adjacent courses. It is not necessary that all the tiles should be nailed to the wall or other backing, but nails or screws may be passed through the projections 37—40 at intervals as the building up of the wall facing proceeds.

It will be apparent that the assembly of a plurality of interlocking tiles all of the form shown in Fig. 14 will result in a wall facing having all the vertical joints in line as shown in Fig. 13. The same result would be attained if all the tiles are of the form shown in Fig. 15 in which the tiles differ from those shown in Fig. 14 only in that the projections 37*a* and 38*a* in Fig. 15 are at the left-hand and right-hand side of the tile respectively and the projections 39*a* and 40*a* are respectively nearer the left-hand lower corner and right-hand upper corner of the tile respectively, whereas the corresponding projections in Fig. 14 are disposed in reverse relationship to those in Fig. 15.

Tiles such as 36 (Fig. 14) may be laid in single courses alternating with courses of tiles such as as 36*a* (Fig. 15), in which case the projections 37*a* in the tiles 36*a* will engage the recesses 41 in the tiles 36 and the projections 38*a* will register with the recesses 42 in the tiles 36.

It will of course be understood that, in finishing the tiled wall surface, any visible projections may be cut off and that suitable half tiles and edging tiles may be provided for finishing the edges or corners of the tiled wall surface.

Instead of the tiles having rectangular projections and recesses as in Figs. 13 to 16, they may have beveled projections and oppositely beveled recesses as illustrated in Fig. 17.

I claim:

1. A wall facing comprising a plurality of generally rectangular tiles set edge to edge with the backs of the tiles against a support, each tile having all its edges bevelled at the same angle, two opposite edges of each tile being beveled at an acute angle to the back of the tile and its other two edges being beveled at an acute angle to the face of the tile, whereby adjacent edges of each tile are oppositely beveled, and fixing elements secured to said support to enable said tiles to be laid in position one by one and in courses in which each vertical joint in one course is aligned with vertical joints in the other courses, each of said fixing elements comprising a metal strip having coplanar flanges extending laterally from opposite sides of the base of a web that is inclined to said flanges at the same angle as the angle of bevel of the edges of the tiles, said fixing elements being secured by their flanges to said support in such manner that the webs of two parallel fixing elements converge and overlie two parallel edges of alternate tiles, while two fixing elements along the other two edges of the said alternate tiles have their flanges divergent and overlapped by the adjacent edges of the said alternate tiles.

2. A wall facing comprising a plurality of generally rectangular tiles, each of said tiles having generally bevelled edges, one opposite pair of edges being bevelled generally inwardly from one of the faces of said tile, the other opposite pair of edges of said tile being bevelled generally inwardly from the opposite face of said tile, said tiles being laid in horizontal courses with the vertical joints between tiles of the adjacent horizontal courses in alignment and being so positioned that the adjoining edges of adjacent tiles are complementary fixing elements having co-planar flanges extending laterally from the base of a web and lying beneath a portion of said tiles, means securing said flanges to a support, said web being shaped and inclined so as closely to fit between adjoining edges of adjacent tiles, whereby alternate tiles have their vertical edges overlapped by a portion of the webs of said elements and the intervening tiles have their horizontal edges overlapped by another portion of the web of said fixing elements.

3. A wall facing comprising a plurality of generally rectangular tiles, one of the faces of each of said tiles being greater in width than the opposite face, said opposite face being greater in length than the first mentioned face, each of said tiles having generally bevelled edges, one opposite pair of edges being bevelled generally inwardly from one of the faces, and the second pair of opposite edges being bevelled generally inwardly from said opposite face, said tiles being laid in horzontal courses with the vertical joints between tiles of the adjacent horizontal courses in alignment and being so positioned that adjoining edges of adjacent tiles are complementary fixing elements interposed between adjoining edges of adjacent tiles, each of said fixing elements comprising a metal strip having co-planar flanges extending laterally from opposite sides of the base of a web that is inclined to said flanges at the same angle as the angle of bevel of the edges of the tile, and means for securing said flanges to a support.

ALEXANDER MONTEATH
BURDON-COOPER.