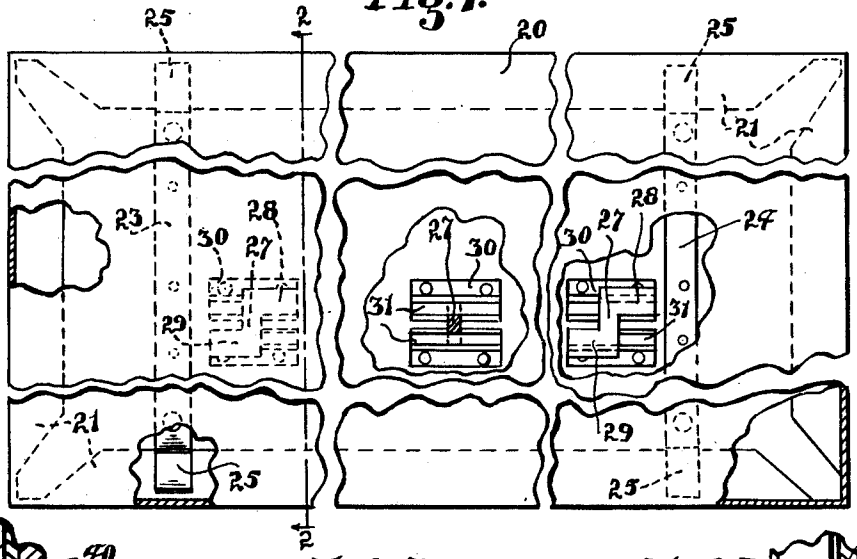
Nov. 3, 1931. G. L. BENNETT 1,829,976

WALL TILING

Filed Jan. 14, 1930 2 Sheets-Sheet 1

Fig. 1.



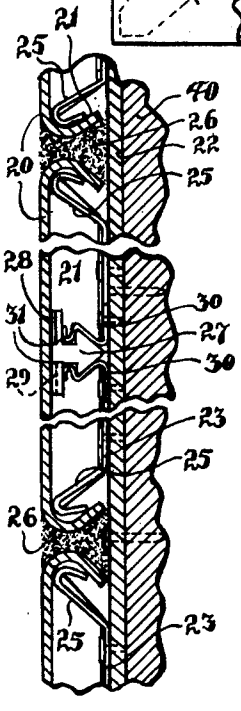


Fig. 2.

Fig. 3.

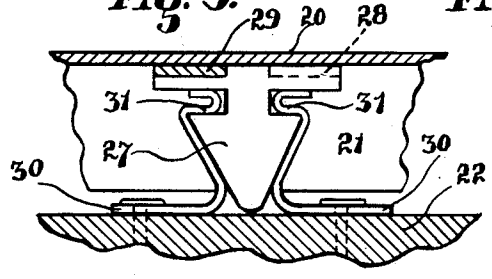


Fig. 4.

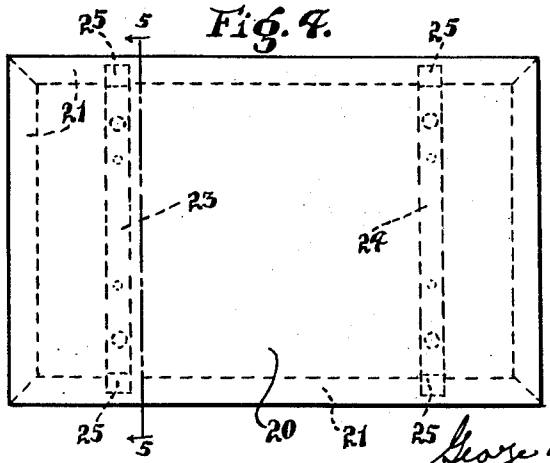
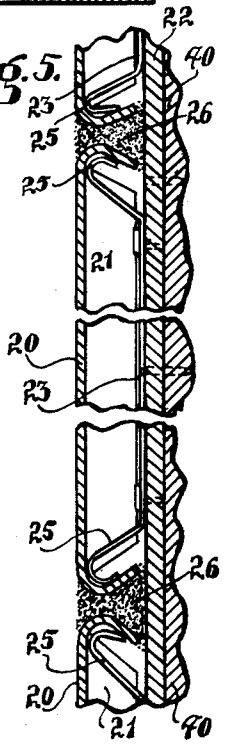


Fig. 5.



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Nov. 3, 1931. G. L. BENNETT 1,829,976

WALL TILING

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Fig. 6.

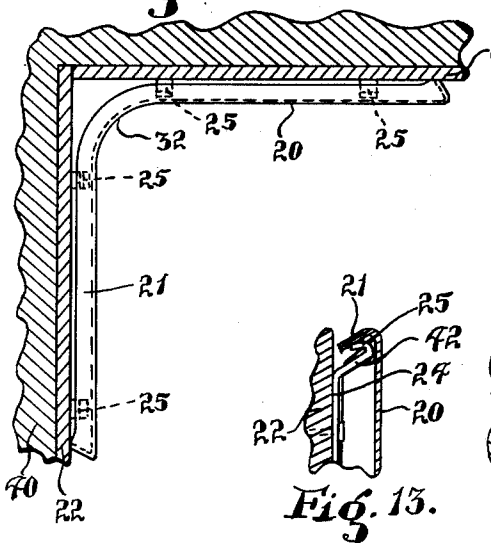


Fig. 13.

Fig. 7.

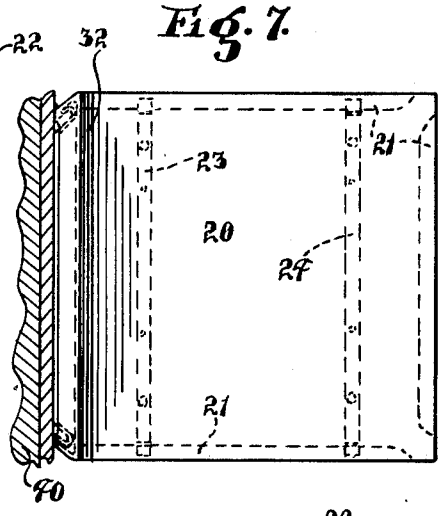


Fig. 8

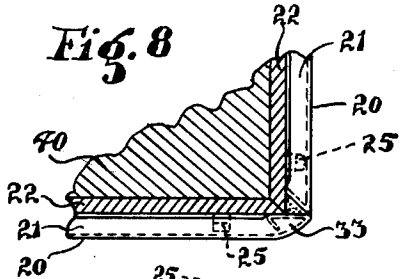


Fig. 10

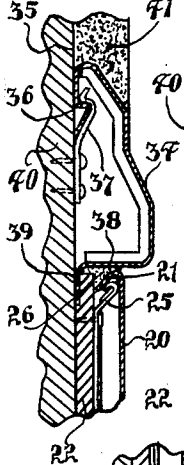


Fig. 11.

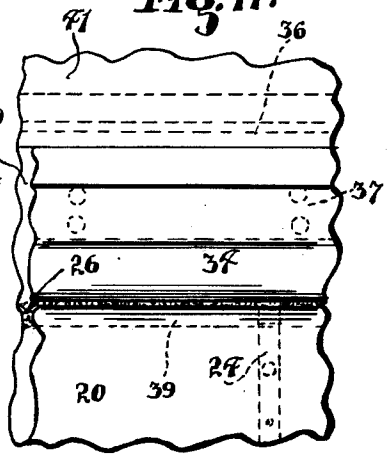


Fig. 9.

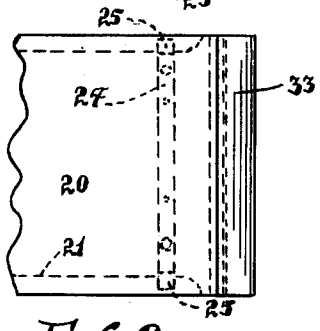


Fig. 12.

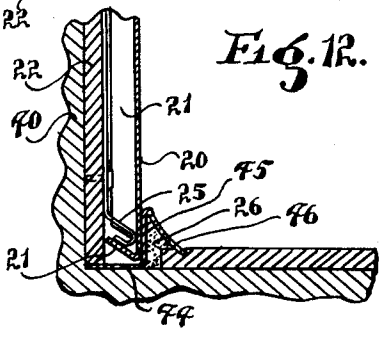
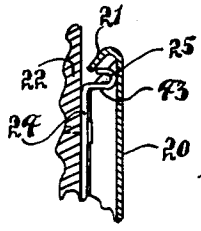


Fig. 14.



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Patented Nov. 3, 1931 1,829,976

UNITED STATES PATENT OFFICE

GEORGE L. BENNETT, OF CLEVELAND HEIGHTS, OHIO

WALL TILING

Application filed January 14, 1930. Serial No. 420,663.

My invention relates to wall tiling, and more particularly to a wall tiling structure composed of a plurality of sheet metal tile units and attaching means co-operating therewith, each so formed as to permit a rapid and accurate mounting of the tiles with permanency in their relation to each other and to the wall, and a finish between adjacent tiles which will not only protect the edges of the sheet metal from which the tile proper is formed, but will itself be firmly anchored in relation to the tiles.

Heretofore, various types of sheet metal wall tiles have been employed, which tiles have been so constructed as to permit them to be set and secured against the wall by means of nails, much in the manner commonly used in laying roof tiling or shingles.

In finishing a room with such tiles, there is not only a considerable labor cost, but skilled labor is required and the tiles themselves are not always firmly secured in position, nor accurately set. Furthermore, in the general type of tiles to which I above refer, cement applied to the seams between adjacent tiles does not have the desired permanency since the glazed surface of the tiles upon the side flanges does not afford an adequate anchorage for the plaster.

With the above conditions in mind, I have provided a wall tile structure wherein the various tile units are so formed as to not only interlock with attaching clips, but to present between adjacent tiles, undercut, dove-tailed seams for the reception of plaster or other material, which, when set, will be held against displacement, since the anchorage is due to the form of the seams and not to the adhesion of the plaster to the surface of the side flanges of the tiles.

The formation of the tile, and of the co-operating attaching clips is such as to permit the application of vitreous enamel to the entire exposed surface of the tile and upon the side flanges of the tile adjacent this exposed surface, the shrinkage of the enamel from the edge of the sheet of which the tile is formed during baking, being no factor, since this edge is not exposed to view and is protected by the plaster filling the seams between adjacent tiles.

The manner of forming the tiles is also such as to impart a high degree of rigidity throughout the tile, although in the case of tiles of larger dimensions, that is, in excess of 6 inches square, means may be provided, so formed and disposed in relation to those portions of the tile lacking the desired rigidity, to secure this portion of the tile in relation to the wall in a manner to prevent inward or outward movement of the tile at such a point or points.

The attaching clips are so disposed as to hold each tile against vertical movement in a plane parallel with the plane of the wall, and also to hold the tile firmly against the wall board to which the clips are attached. Furthermore, by the use of such clips, the setting of each tile may be predetermined by securing the clips to a wall facing board, while in the factory, thus avoiding the labor and skill which otherwise would be required in accurately positioning these clips upon the wall.

While the majority of tiles used in a wall structure are ordinarily what may be termed, flat tiles, the construction of the tile units, and of the attaching clips, is such as to be readily adapted to interior or exterior angular tiles for finishing off the corners about a room. I also provide specially formed cap tiles and base tiles for finishing the wall tiling structure. These various forms of tiles, while being requisite to secure the desired finish, differ from the standard tiles only in their configuration to adapt them to their particular uses.

The invention consists in the novel features of construction and combination of parts hereinafter set forth and described, and more particularly pointed out in the claims hereto appended.

Referring to the drawings,

Fig. 1 is a view, vertically and laterally condensed and broken away, of a large size, flat tile;

Fig. 2 is a fragmentary section on the line 2—2 of Fig. 1, extended to include adjacent tiles;

Fig. 3 is an enlarged detail view of a fragmentary portion of the tile showing the reinforcing or stiffening means employed with larger tiles;

Fig. 4 is a front view of a small size tile, the attaching clips being indicated in dotted lines;

Fig. 5 is an enlarged cross sectional view upon the line 5—5 of Fig. 4, extended to include portions of adjacent tiles;

Figs. 6 and 7 are respectively an edge and a face view of an interior angle tile;

Figs. 8 and 9 are respectively an edge and a face view of exterior corner tiles;

Figs. 10 and 11 are respectively a vertical section and a front view of a portion of a cap tile;

Fig. 12 is a vertical section showing the floor finishing tile strip; and

Figs. 13 and 14 are modified forms of attaching clips.

Like numerals refer to like parts throughout the several views.

In the embodiments of the invention shown in Figs. 1 to 9, each tile unit shown has certain characteristics in common, to wit:—a dished sheet metal, vitreous coated, tile having a flat, exposed face portion 20, and inwardly converging side flanges 21, also coated with vitreous enamel. Each tile is secured against a wall facing board 22 by means of a spring clip arrangement consisting of metal strips 23 and 24, each provided, at the opposite ends thereof, with a yieldable clip or latch member 25 engageable respectively with a converging side flange of the tile proper. These yieldable clip or latch members 25 are of a configuration to interlock with the inwardly converging side flanges of the tiles so as to firmly hold the tiles, not only against vertical movement, but also against movement toward and from the wall board 22. Such latch members are also so formed as to yield when subjected to pressure from the edge of a side flange.

Since all of the tiles to be used will ordinarily have the same surface area, it is obvious that the spring clip members 23 and 24 may be applied to the wall board 22 in the shop, so as to accurately locate all of the tiles secured in relation thereto in one course, in relation to the tiles of an adjacent course, and properly space them, thus avoiding the labor and skill of setting tiles during their installation in a room.

The wall boards 22 may be of any desired material and of any desired dimensions, it being understood, however, that the dimensions of the boards will be such as to accommodate a considerable number of tiles. The advantage of the use of a wall board 22 is that it may be attached firmly to the wall by means of the studding by unskilled labor, the rigidity or permanency of the various tiles being determined by the manner of attaching the clips to the wall board, and not to the securing of a proper anchorage for each clip in relation to the wall itself.

In positioning the clips upon the wall board, they are so set as to provide a seam of the desired width between adjacent tiles of each course, which seam, by reason of the inwardly converging side flanges of the tile proper, will be of progressively increasing width toward the wall board, thus forming an undercut or dove-tailed pocket for receiving the finishing plaster or cement, shown at 26 in the drawings, which plaster or cement will consequently be locked in the seam without possibility of its escape therefrom even after long continued installation of the tiles. By this construction, adhesion of the plaster to the surface of the tile at the seams is unnecessary.

The inwardly converging side flanges of each tile serve the three-fold object of stiffening the tile as a whole, thus permitting the production of tiles from light metal stock, of retaining the tiles in position in combination with the attaching clips, and of retaining the plaster used in finishing the seams between the tiles.

The side flanges 21 may be made continuous by a folded and welded joint at the corners, as shown in Fig. 4, or may be interrupted at the corners as shown in Fig. 1, the formation of the corners being largely a matter of design to facilitate production methods by means of tools.

The depth of the flanges 21 will, in actual practice, rarely exceed one-quarter of an inch, the scale of Figs. 1 to 3 and 5 of the drawings being grossly enlarged, while that of Figs. 4 and 6 to 13 being approximately accurate.

By providing slightly rounded edges at the juncture of the face and side flanges, shown more particularly in Figs. 2 and 5, a proper application of vitreous enamel throughout the exposed portion of each tile is assured, and any imperfections of the enamel, developed during the baking operation about the edges of the flanges, will be concealed and protected by the plaster of the seams.

The surface dimensions of the various wall tiles may vary according to the artistic requirements in finishing a room, but variance in the configuration of the surface of the tile requires no modification in the structural characteristics thereof with the exception that if tiles six inches or more in length are to be used, it is desirable to provide stiffening or reinforcing means more or less remote from the side flanges, so as to avoid the flexure of the tile as a result of pressure or impacts thereon.

When such reinforcing or stiffening means is required, I apply, by welding, to the under side of the face of the tile, a sheet metal barb 27, the base of which is provided with oppositely offset flanges 28 and 29 to facilitate the

attaching of the barb to the metal of the tile. Secured to the wall board 22 are elongated spring clip members 30, the clip or latch ends 31 of which are adapted to interlock with the barb and thus hold the barb and the portion of the tile to which it is attached, against displacement, either toward or from the wall board 22. These spring clip members 30 may, like the spring clips 23 and 24, be attached to the back board in the shop, the clips being of sufficient length to adapt them to any irregularities in the positioning of the barbs of different tiles and permit horizontal adjustment of a tile in relation to its attaching clips.

This reinforcing or stiffening means is illustrated in Figs. 1 to 3.

Referring to Figs. 6 and 7, in these views an interior corner angle tile is shown. The construction of this tile differs from that heretofore referred to, in that it is bent intermediate the vertical flanges upon a curve as shown at 32, so as to form a rounded cove at an interior angle of a room.

Referring to Figs. 8 and 9, the construction is such as to provide an overhanging, curved tongue 33 at one edge of the tile to form an exterior angle. This construction necessitates the formation at this edge of the tile of a reinforcing flange, differing from the formation of the other flanges, as shown more particularly in Fig. 8.

Referring to Figs. 10 and 11, these views show the detailed construction of a cap tile in its relation to the top course of the tiling for giving a finish at this point. It consists of a sheet metal strip 34, the face of which may be drawn to any desired configuration, and the upper portion of which is inclined toward the wall 35 and formed downwardly with a reverse flange portion 36 to form a keeper adapted to interlock with a spring latch plate 37 secured to the studding or other portion of the wall structure. The bottom of the strip is formed inwardly, as at 38, and downwardly as at 39, to form a tongue engageable by the back board 22 adjacent the uppermost course of tiles.

In these views and throughout the drawings, the studding is indicated at 40. The upper portion of the cap tile is enclosed by the wall plaster 41.

In Fig. 13, I have shown the details of the attaching clip, shown in Figs. 1, 2 and 5, in which the shank 42 of the clip or latch member projects at an obtuse angle from the strip so as to bring the latch member well within the pocket about the side flange of the tile proper. This construction gives a fairly stiff spring action, which, from the standpoint of rigidity in the setting of the tile, is desirable, but makes the setting of the tile somewhat more difficult by reason of the stiffness of the latch member. On the other hand, in Fig. 14, I have shown a latch member 25 in which the shank 43 extends at substantially right angles to the strip 34 which has the effect of making the latch member more resilient and thus give increased ease in the setting of the tile with a possible sacrifice of some of the rigidity in the set of the tile. However, the construction of the latch member 25 may be varied almost indefinitely for the purpose of controlling its action when mounting the tile by means of the clip or latch member, and in holding the tile in position after attachment.

It is obvious that whatever the form of latch member used, it must engage the side flanges 21 of the tiles in a manner to hold them against the wall board or wall, and position the tiles in relation to each other so as to secure substantial uniformity in the width of the seams between tiles in adjacent courses preparatory to the filling of such seams with the plaster or cement 26. It is preferable to also make the stem of the latch members of a length to engage the rear wall of the face of the tile, so that the latch members will be engaged within the pocket formed by the side flanges and thus firmly hold the tiles in position.

To give a finish to the tiling adjacent the floor of a room I provide what may be termed a "mop" strip, such as is shown in Fig. 12. This consists of a strip 44 of a width to bring the vertical flange 45 in close contacting relation with the face of a tile positioned against the wall immediately above the base 44. Extending downwardly from the flange 45 is a face portion 46 which has a downwardly and outwardly concave curvature. This face portion is coated with vitreous enamel, in fact the whole strip ordinarily being so coated. These mop strips form a slight cove adjacent the floor, and will serve to protect the wall at the floor line and also may be used for holding the floor covering in position adjacent the tiling.

With a tile wall structure such as is herein described, it is obvious that when wall boards 22 are used, which is preferable, the various clips 23—24 may be nailed, screwed, riveted or otherwise secured upon large sheets of the back board, while in the shop. Accuracy in the location of the strips supporting the clips or latch members may be secured by means of templets, so that the work may be rapidly done. If it be desired not to use such boards, the same templets may be used on the job, but this will require more time than would be consumed when doing the work in the shop.

When installing the tiling it is merely necessary, when the back board 22 is used, to nail the boards to the wall studding, thus simultaneously accurately positioning all of the clips or latch members carried by each board in relation to each other and to the wall. The back boards may be cut and fitted

upon the job, and the end clips or latch members may be reset if necessary towards the end of any course. When the clips are in position, whether the back board be used or whether the clips be applied directly to the studding or lathing, it is merely necessary for an unskilled workman to apply the tiles to the wall by pressing them against the clips or latch members which will yield to permit the passage of the side flanges of the tile, immediately snapping into place when the tile is in proper position in relation to the back board or the wall.

When the tiles are in proper position, the cap tile strips or units are positioned contiguous to the uppermost course of tiles by slipping the flange 39 beneath the top edge of the uppermost wall board 22, and back of the upper side flange or flanges of the top course of the regular tiles, and the tongue 39 beneath the latch plate 37. The manner of applying either interior or exterior angle tiles is the same as with the regular tiles.

It will be noted that by using, with each tile, strips 23 and 24 extending parallel with each other and engaging the opposite side flanges of a tile, each tile is not only secured in relation to the wall at a plurality of points, but is held against vertical movement after being so attached, while lateral adjustment to a limited extent in setting the tiles of a course by widening of vertical seams between tiles, is permitted.

So far as the mop board finish is concerned, the strip 44 is set upon the floor of the room and inserted beneath the lower edge of the back board 22 and the side flange of the lowermost course of tiles with the vertical flange 45 of this strip engaging the face of the tiles of the lowermost course. The curved face 46 of this strip has sufficient resiliency to permit the edge of oilcloth or other floor covering to be inserted beneath same by slightly raising this face, it being feasible to groove the floor covering so that when the face 46 returns to its normal position, its lower edge will enter this slot and thus serve as a retainer for the floor covering.

During the progress of installing the tiling, or upon the completion of the setting of all of the tiles, the various seams may be filled with plaster or other cement, which, as heretofore stated, will be locked in position by reason of the dove-tailed formation inwardly of the various seams. To properly reinforce the facing 46 of the mop board strip, the space between said face 46 and the vertical flange 45 should be filled with plaster or cement at the time of laying the floor.

All of the tile elements may be made of fairly light sheet metal stock and coated with a suitable vitreous enamel. It will be noted that when these various tile elements are in position, there is no exposure of any edge of the sheet from which the tile is made, so that the shrinkage of the enamel away from such edges, during baking, will not result in any unsightliness in the finished wall. Since the tiles are made of sheet metal by means of bending, forming or drawing dies, there will be a slight curvature about the juncture of each side flange with the face of the corresponding element which, while not noticeable in the tile, will ensure a proper continuous enamel coating at this point.

It is not my intention to limit the invention to the precise details of construction shown in the drawings, it being obvious that such may be varied without departing from the spirit and scope of the invention.

Having described the invention, what I claim as new and desire to have protected by Letters Patent, is:—

1. Wall tiling embodying therein a plurality of enamelled sheet metal tiles, each having converging side flanges, and a spring clip for permanent attachment to a wall structure engageable with a side flange of each tile,

2. Wall tiling embodying therein a plurality of enamelled sheet metal tiles, each having converging side flanges, a wall board adapted to be fitted and attached to the wall of a room, and a plurality of spring clips permanently attached to said wall board, each of said spring clips being engageable with the side flange of each tile.

3. Wall tiling embodying therein a plurality of enamelled sheet metal tiles, each having converging side flanges, and a metallic strip for permanent attachment to a wall structure, having at the opposite ends thereof clips or latch members engageable with opposite flanges of each tile.

4. Wall tiling embodying therein a plurality of enamelled sheet metal tiles, each having converging side flanges, a wall board adapted to be fitted and attached to the wall of a room, and a plurality of metallic strips permanently attached to said wall board, having at the opposite ends thereof clips or latch members engageable with opposite flanges of each tile.

5. Wall tiling embodying therein a plurality of enamelled sheet metal tiles, each having converging side flanges, a spring clip for permanent attachment to a wall structure engageable with a side flange of each tile, whereby tiles in the same course and in adjacent courses are spaced apart by a dove-tailed seam, and a plaster filler for said seams.

6. Wall tiling embodying therein a plurality of enamelled sheet metal tiles, each having converging side flanges, a spring clip for permanent attachment to a wall structure engageable with a side flange of each tile, a barb carried by said tiles remote from said side flanges, and parallel clips for permanent attachment to a wall structure engageable with said barb, whereby in tiles of larger dimensions said barb will prevent

flexure of the tile intermediate said flanges.

7. Wall tiling embodying therein a plurality of enamelled sheet metal tiles, each having converging side flanges, a wall board adapted to be fitted and attached to the wall of a room, a plurality of metallic strips permanently attached to said wall board, having at the opposite ends thereof clips or latch members engageable with opposite flanges of each tile, a barb carried by said tiles remote from said side flanges, and parallel clips permanently attached to said wall board engageable with said barb, whereby in tiles of larger dimentions said barb will prevent flexure of the tile intermediate said flanges.

8. Wall tiling embodying therein interior corner angle enamelled sheet metal tiles, each having converging side flanges, and each being bent intermediate the vertical side flanges upon a curve so as to bring the opposite ends of the tiles in substantially right angular position, and spring clips for permanent attachment to a wall structure engageable with said flanges of each such tile.

9. Wall tiling embodying therein exterior corner angle enamelled sheet metal tiles, each having an overhanging, curved tongue at one edge thereof, and spring clips for permanent attachment to a wall structure engageable with said flanges of each such tile.

10. Wall tiling embodying therein cap tiles, consisting of a sheet metal enamelled strip, the upper portion of which is inclined toward the wall and provided with a downwardly formed portion, a reverse flange portion, a spring latch plate co-operating with said reverse flange portion and adapted to be permanently attached to a wall structure, the bottom of said strip being formed inwardly and downwardly, whereby a tongue is formed adapted to be inserted back of the uppermost course of tiles.

11. Wall tiling embodying therein a sheet metal enamelled mop strip, consisting of a strip having a base flange adapted to be seated upon the floor of a room, a vertical flange adapted to engage the face of the lowermost course of tiles, and a downwardly and outwardly concave face portion engageable with the floor covering of a room.

In witness whereof I have hereunto affixed my signature this 11th day of January, 1930.

GEORGE L. BENNETT.