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METHOD AND MEANS FOR FASTENING PENETRABLE TILES

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FIG-1

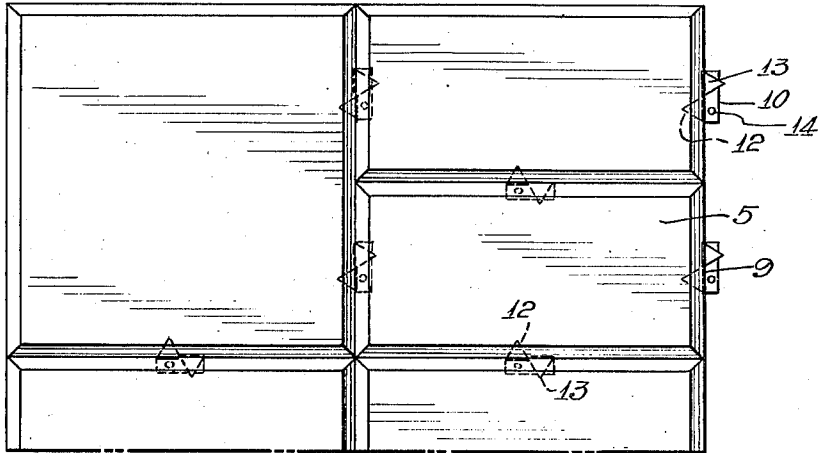


FIG-2

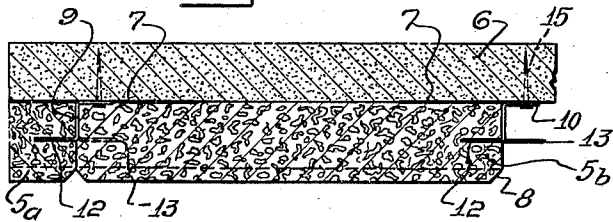


FIG-3

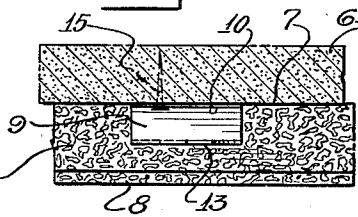
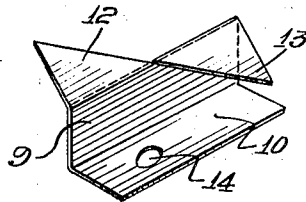


FIG-4



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## METHOD AND MEANS FOR FASTENING PENETRABLE TILES

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6 Claims. (Cl. 72—101)

This invention relates to fastening devices, and has reference more particularly to fastening devices or clips for and methods of securing penetrable tiles to ceilings or walls of buildings.

5 In the application of tiles or other sheets of wall finishing material to the walls or ceilings of buildings, the fastening means commonly used consists of an adhesive or cementing agent applied to the inner surface of the tile for the purpose of fastening the tile to the wall or ceiling. These tiles are generally composed of a light weight fibrous material, such as mineral wool, and a suitable binder, and are subject to slight variation in size due to expansion and contraction, with the resulting loosening of the adhesive material, particularly along the edges of the tile. It is therefore desirable to supplement the adhesive material with mechanical devices to hold the tile firmly in place or to use a mechanical device in substitution for the adhesive materials.

An object of this invention, therefore, is to provide a mechanical means for securing readily penetrable tiles or other wall surfacing material to wall or ceiling surfaces.

A further object of this invention is to provide a mechanical means to supplement adhesive or cementing material in securely fastening tiles to building surfaces; also to improve tile fastening devices in other respects hereinafter specified and claimed.

Reference is to be had to the accompanying drawing forming a part of this specification, in which

Fig. 1 is a plan view of a section of tiles, showing my improved clips in place,

Fig. 2 is a sectional elevation through the tiles and ceiling surface,

Fig. 3 is a side elevation of the clip in place, and Fig. 4 is a perspective view of the improved clip.

The fibrous tiles 5 of mineral wool or vegetable fiber base, may be attached to a ceiling surface 6 by means of an adhesive substance 7, with their edges in abutting relation as shown in Fig. 2. They may be finished with beveled edges 8 to add to the appearance of the finished wall or ceiling. The expansion and contraction of the tiles tends to loosen the adhesive 7 and may allow the tiles to break loose from the surface.

50 Tiles made of mineral wool are generally used for covering building surfaces for purposes of acoustical control and have proven very valuable in eliminating the confusion of sound encountered in offices, auditoriums, restaurants, etc.

55 The acoustical efficiency of mineral wool tiles is

derived from the porous nature of the exposed faces due to the manner of manufacturing the same, which may comprise bonding together granular mineral wool, that is, mineral wool in the shape of highly porous little balls of rather irregular shape and of the size of a pea or larger, by means of a suitable binder, and then finishing the surface to expose the porous interior. Such tiles are, obviously, rather frangible and crushable in nature and must be carefully handled and erected to minimize breakage. The improved method of fastening which I have devised is particularly adapted for erecting tiles of this nature.

My improved fastening means for attaching tiles of the type described to the building surface, consists of a metallic clip body 9 formed from a thin sheet of metal of any convenient size, having a narrow base 10 adapted to rest flat against the ceiling surface 6. One or more flanges or pointed prongs 12 and 13, in the form of two right triangles extend outwardly from the clip body 9 and parallel to the base 10, said prongs extending in opposite directions one to the other. One of the prongs 13 preferably extends in the same direction as base 10 and is somewhat longer than the width of the base and a perforation 14 in that end of the base 10 which is adjacent the flange 12, is adapted to receive a nail or other fastening means 15 for the purpose of securing the clip 9 to the surface 6. The perforation 14 is preferably placed as close as possible to the clip body 9 in order to avoid disalignment of the clip otherwise caused by cradling of base 10 when a nail or the like 15 is driven thereagainst.

My clip may be used in addition to adhesive applied to the inner surface of the tiles to clamp the same to a wall surface while the adhesive is setting and then retain the same against dislodgment due to failure of the adhesive bond, or it may be used as the sole means of fastening the tiles to the wall surface. In applying the clip 9 the base 10 is placed flat upon the surface 6 and the nail 15 is driven through the perforation 14 into said surface to hold the clip firmly in place. A tile 5a as shown in Fig. 2, is pressed tightly against said surface and moved in a lateral direction to receive prong 12 to the full depth of said prong, the upper portion of said tile fitting into the space formed by the body 9 of said clip and prong 12. A second tile 5b is moved laterally along the surface 6 on the opposite side of clip 9 to receive prong 13, the upper portion of said tile fitting into the space formed by the prong 13 and the base 10. It is preferable to have the tiles 5a and 5b in substantially uniform con-

tact with surface 6, so that the finished tile surface will conform to the plane of said surface 6 and present a uniform, pleasing appearance. To this end, the base 10 of the clips is preferably as narrow as possible so that a minimum of area is presented to the attaching face of the tile, whereby resistance is reduced when the tile is forced into place against the clip, and the tile face will readily give way, as by crushing, where the base 10 contacts the same. In this manner the base 10 will become substantially embedded in the face of the tile and all parts of the tile inter-face not contacting a clip may bear uniformly against the building surface. Even where a substantial layer of adhesive cement or the like is placed between the tiles and the building surface so that it becomes unnecessary to imbed the clip bases in the inter-face of the tiles, a narrow base 10 lends advantage in that the undesirable features presented by cradling of a wider base are avoided and erection is facilitated.

In placing the next of a series of clips, the base 10 of clip 9 is placed tightly against the surface 6 at the opposite edge of tile 5b and moved in a lateral direction until prong 12 penetrates its full depth into the tile 5b, and nail 15 is driven through the perforation 14 into the surface 6. The prong 13 then extends opposite prong 12 to receive the next of a series of tiles, and the operation described is continued throughout the surface to be covered. The tiles are preferably brought into close edge-abutting relationship, with the body portions 9 of the clips embedded in the adjoining edges of the tiles, whereby there is a substantially continuous contact of the tile edges to prevent the infiltration and accumulation of dust and dirt and the exposed tile surface presents a substantially uniform, close-fitting appearance.

I would state in conclusion that while the illustrated example constitutes a practical embodiment of my invention, I do not wish to limit myself precisely to these details, since manifestly, the same may be considerably varied without departing from the spirit of the invention as defined in the appended claims.

Having thus described my invention, I claim as new and desire to secure by Letters Patent:

1. In a fastening means for penetrable tiles, a thin sheet metal clip having a clip body, a base, and a pair of triangular prongs, the prongs extending in opposite directions and being adapted to be forced into the body of adjacent tiles, said base being somewhat narrower than the length of the prong extending over the same and having a perforation opposite the prong directed away from said base, for the reception of means to hold said clip firmly in place upon the surface against which said tiles are fastened.

2. The method of covering a building surface

with penetrable, frangible tiles of mineral wool aggregate or the like, which comprises applying adhesive means to retain said tiles in abutting relationship and in substantially uniform and close contact with said building surface, clamping said tiles to said building surface by forcing clip means between their abutting edges to grip the tiles, and securing said clip means to said building surface, whereby said tiles are retained against dislodgment before said adhesive has set or by failure of said adhesive to secure a permanent bond between said tiles and said surface.

3. In combination, a building surface, a series of fibrous tiles of substantially uniform thickness covering said surface in close conformity, said tiles being attached to said surface by means of adhesive, the bond of said adhesive being subject to breakage due to expansion or contraction of said tiles, and supplemental attaching means for said tiles comprising thin sheet metal clips provided with a body part embedded between the adjoining edges of a pair of tiles, oppositely extending prongs penetrating the body of said tiles, and a base member nailed to said building surface, said base member being adapted to be imbedded in the adjoining face of a tile by crushing of the material thereof, so that every part of said tile surface may contact said building surface except where said clip base is imbedded therein.

4. In a building construction, the combination with a supporting element and a wall-covering element having readily penetrable side edges, of a fastening member comprising a portion attached to said supporting element and a prong forced into a side edge of said wall-covering element at any desired point to provide support therefor.

5. In a building construction, the combination with a supporting element and a plurality of wall-covering elements positioned in edge-to-edge abutting relation and having readily penetrable edges, of a fastening member comprising a portion attached to said supporting element and prongs forced into the abutting edges of said wall-covering elements at any desired location to provide support therefor.

6. In a building construction, the combination with a supporting element and a plurality of wall-covering elements positioned in edge-to-edge abutting relation and having readily penetrable edges, of a fastening member comprising a portion attached to said supporting element, a web portion extending from said attached portion between the abutting edges of said wall-covering elements, and prongs projecting laterally in opposite directions from said web portion and forced into the abutting edges of said wall-covering elements at any desired location to provide support therefor without being visible from the exposed side thereof.

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