Nov. 20, 1945. L. F. URBAIN 2,389,171

MEANS FOR ASSEMBLING CONSTRUCTION UNITS

Original Filed Oct. 18, 1939

FIG. 1.

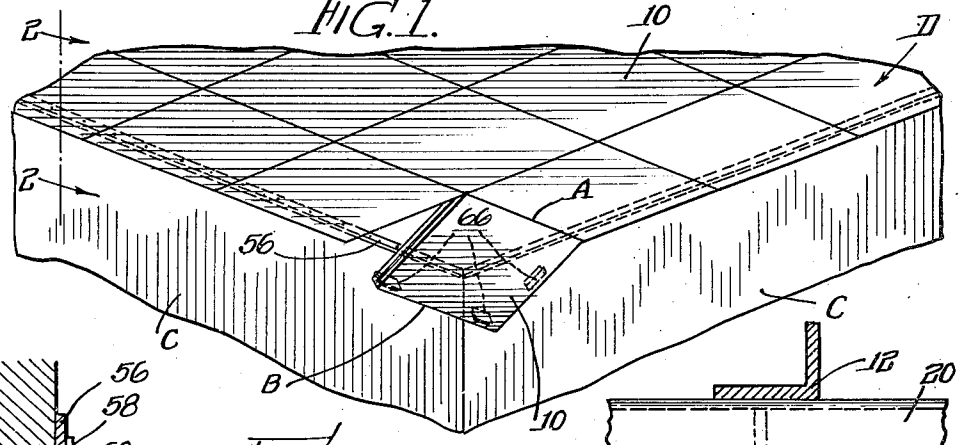


FIG. 2.

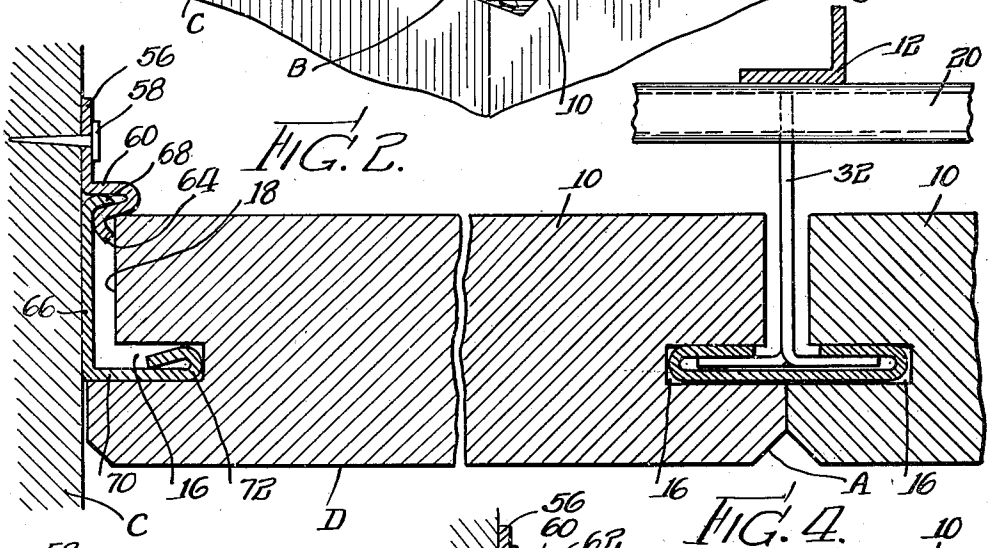


FIG. 3.

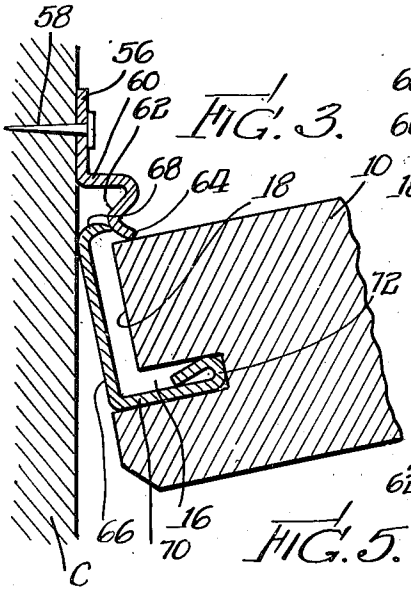


FIG. 4.

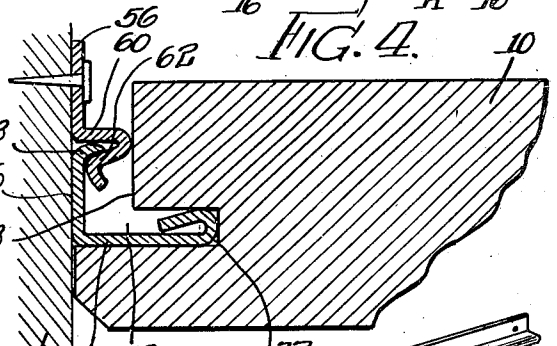
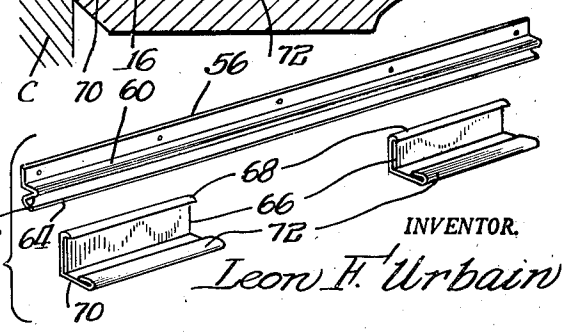


FIG. 5.



INVENTOR.

Leon F. Urbain

By:- Loftus Moore Olson & Trexler attys

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MEANS FOR ASSEMBLING CONSTRUCTION UNITS

Leon F. Urbain, Chicago, Ill.

Original application October 18, 1939, Serial No. 299,926. Divided and this application October 12, 1942, Serial No. 461,706

7 Claims. (Cl. 72—118)

The present invention relates to the assembly of walls and surfaces from construction elements and, more specifically, to the combination of surfacing or sheathing units on a supporting frame or partition.

It is within the contemplation of the present invention to provide a new and improved method for permanently assembling wall slabs or other construction units, which method is rapid in application and which is carried out with simple and inexpensive construction elements whereby the cost of construction is lowered.

Yet more particularly the present invention relates to that type of wall slab or surfacing unit provided with a kerf which, for purposes of illustration in accordance with the following specification and claims, will be referred to as acoustical tile. Such units are normally supplied in geometrical, preferably rectangular shapes of predetermined dimension, the peripheral kerf permitting the introduction of a spline at all peripheral margins for providing a breathing stop. In the past, considerable difficulty has been experienced in assembling these units. Nailing is impractical and unsightly and cannot be employed in conjunction with many conventional sub-walls or supporting frames. Adhesive glues are structurally undesirable, impermanent and are often attacked by alkali in plaster cement. Mechanical systems of attachment have been unsatisfactory in view of the obvious difficulty of positively interlocking the entire periphery of each construction unit with means which is permanently mounted interiorly of the finished wall.

The object of the present invention comprises the provision of an improved interlocking connection for supporting the so-called last or end row of tiles with respect to a transversely extending wall and contemplates an interengaging clip and runner construction completely retained within the outer surface of the finished wall for interengagement with the adjacent peripheral spline.

Yet other and further objects will be more apparent from the following detailed description when considered in connection with the accompanying drawing.

The present application is a division of my pending application, Serial No. 299,926, filed October 18, 1939.

Referring now to the drawing:

Figure 1 is a perspective view illustrating the method of assembling the last row of tiles into position.

Figure 2 is a sectional view taken on vertical line 2—2 of Figure 1.

Figure 3 is a sectional view of the interlocking runner and clip for the members showing the position just before the interlock has occurred.

Figure 4 is a modified form of the clip and one of the tile members.

Figure 5 is a perspective view of the interlocking runner and clip members for supporting the last row of tiles.

Referring now to the drawing in detail, the present invention illustrates the ceiling construction comprising aligned acoustical tile slabs or units 10 secured to a supporting frame or wall construction comprising sleepers 12 by means of a structural assembly indicated generally by the reference numeral 20. The so-called acoustical tiles 10 contemplated may be, and preferably are, for purposes of illustration, best represented as those conventional elements formed from compacted fibrous material and therefore relatively soft. It is to be understood, however, that the invention is not so limited in scope of application, but is applicable with equal facility to construction and assembly of so-called tiles formed of any other material such, for example, as cork, composition, or even ceramic materials such as baked clay.

As clearly indicated in the drawing, each of the rectangular units 10 has a peripheral kerf or slot 16 disposed between its front and rear surfaces, and in accordance with the usual practice, the rear flange or tongue defined by the kerf is relieved or cut back as at 18.

The structural supporting assembly comprises a supporting channel rail 20 secured to the spaced frame members 12 by any desired means. The rails or channels 20 engage the entire final assembly of acoustical tiles with the frame 12 through the agency of any desired type of attachment clips not herein shown, but which are shown and claimed in the parent application, Serial No. 299,926. It is only important to state that therefore means is provided for supporting the acoustical tile elements 10 at peripheral edge portions other than those edge portions which make up the outermost or peripheral border of the entire assembly. The invention of the present application relates to claims drawn to means for finally and ultimately locking in place the final peripheral edges of the tiles constituting the last row of tiles to be assembled in place. This is shown clearly in Figure 1 where one of the tiles is shown as not having been pushed upwardly into position. It is shown with an edge A which

has been supported by a fastening member 32 to an adjoining tile 10 by means of a particular kind of supporting mechanism, claimed in the parent application. The present invention resides in means whereby the edge B of this tile may be swung upwardly and located in place to support means carried by a vertical wall C. As before stated, the present invention resides in providing means for overcoming a long standing difficulty inherent in assembling a final row of column of units wherein a lateral wall or abutment intervenes. I have provided an improved construction comprising a runner and clip construction for accomplishing this. Thus, in the figures a ceiling D is shown, for purposes of illustration, as bounded by the vertical walls C against which the last row of tile must abut, and to which it must be supportingly connected. To this end I provide a horizontal strip or runner 56 which fastens to the vertical wall C as at 58. This strip or runner comprises a downwardly extending flange portion terminating in a lower latch comprising an outwardly extending yieldable flange 60, a reversely extending resilient lug 62 and a downwardly and outwardly inclined resilient clip impinging portion 64. The clip, which is adapted for association with the tile unit 10, comprises an upwardly extending flange 66 terminating in a marginal laterally disposed resilient lip 68. The lower extremity of the wall 66 is flanged as at 70 and reversely beaded as at 72. As clearly shown in Figures 3 and 5, the bead 72 and the flange 70 are disposed within the kerf of the tile 10, whereupon the wall section 66 extends within the space provided by relieving or offsetting the rearward margin of the tile as at 18. With the clip receiving strip arranged as shown, and the clip located within the kerf 16, the tile is angularly shifted upon the opposite spline strip, as shown in Figure 2, as a fulcrum, to bring the clip into association with the wall mounted runner. The yieldability of the parts 60 and 64 permits permanent interengagement. It will thus be seen that the outer face of the outwardly bent flange 62 overlies and contacts the upper corner edge of the kerf while the outer edge of the free tongue 64 engages the side wall of the kerf. It will also be seen that the lip 68, engaging in the reentrant fold or pocket formed by the outwardly extending yieldable flange 60, locks in such position due to the resiliency of the parts, and furthermore that this resiliency maintains the free tongue 64 and the outer wall of the flange 62 resiliently against the top marginal edges of the tile 10. Such a fastening strip may be employed to support the tile unit along the transverse margins where desired, and it is to be noted that any number of clips may be arranged within the kerf, or a continuous clip member may be employed. Upon upward movement of the last row of the unit, the top of the interlocking tongue 68 will engage in the interlocking socket formed by the transverse flange portion 60 and the refoldable tongue portion 62, the top of the laterally disposed resilient lip 68 engaging the underside of the outstanding flange 60, thereby forming a stop to limit further upward movement of the unit 10, and in addition, as shown in Figures 2 and 4 the outer facial portion of the resilient member 60—62 will yieldingly engage the outer wall of the unit whereby to hold the interlocking portions 68, 60, and 62 in interlocked position.

In unusual installations where sufficient space is not available to attach the clip receiving strip, this strip may be disposed within the marginal planes of the tiles by merely shortening the height of the clip, to wit, the height or length of the flange 66. Under such circumstances it is important that the inner margin of the tile be further relieved or offset to receive the outwardly projecting portions 60, 62 and 64.

It is thought that the invention and numerous of its attendant advantages will be understood from the foregoing description and it is obvious that numerous changes may be made in the form, construction and arrangement of the several parts without departing from the spirit or scope of the invention, or sacrificing any of its attendant advantages, the form herein described being a preferred embodiment for the purpose of illustrating the invention.

The invention is hereby claimed as follows:

1. A construction runner for engaging kerfed wall construction units with suitable supporting units comprising an elongated sheet metal member having a relatively flat flange secured to the wall of the support, said flange having a laterally extending inwardly bent portion folded upon itself in spaced relation to said inwardly extending portion to provide a spring metal tongue forming substantially a V-shaped internal recess on one side, one face of said folded over portion contactingly engaging the outer wall of the constructional unit above the kerf therein, and the resilient free edge of said folded over portion yieldably engaging the angularly disposed side wall of the kerfed unit, and a sheet metal clip having a relatively flat flange the one portion of which is provided with an inwardly extending resilient tongue lying in the recessed portion of the folded over portion of the sheet metal member and likewise engaging an inner portion of the resilient tongue, said sheet metal clip having a laterally depending angularly disposed flange engaging in the kerf of the wall construction unit.

2. Fastening means for locking rows of kerfed tiles in position relatively to the ceiling and side walls of a room, wherein the kerfed tiles are mounted in rows and provided with means interconnecting the junctional kerfed edges of the tiles with the ceiling and with means connecting the kerfed tiles of the outermost rows with the side walls, said last named means comprising fastening means having a portion mounted in the kerfs of the tile units, each fastening means having a substantially normally extending, yieldable terminal locking portion of single thickness, and cooperative locking means having a portion adapted to be mounted on the side wall of the room, said cooperative locking means having a portion of doubled thickness extending transversely outwardly of said side wall and terminating in a laterally extending, resilient, interlocking member, said outwardly extending doubled portion having spaced apart walls forming a socket sufficiently wide snugly to receive the yieldable terminal locking portion of the fastening means carried by the kerf of the unit and grippingly to interlock therewith, said laterally extending, resilient means yieldably engaging the outer wall portion of the kerfed unit whereby said engagement tends to maintain said interlock with said resilient terminal locking portion.

3. Fastening means for locking rows of kerfed tiles in position relatively to the ceiling and side wall of a room, wherein the kerfed tiles are mounted in rows and provided with means interconnecting the junctional kerfed edges of the tiles with the ceiling and with means connecting the kerfed tiles of the outermost rows with the

side walls, said last named means comprising fastening means having a portion mounted in the kerfs of the tile units, each fastening means having a substantially normally extending yieldable terminal locking portion, and cooperative locking means having a portion adapted to be mounted on the side wall of the room, said cooperative locking means having a doubled portion extending transversely outwardly of said side wall and terminating in a depending, resilient, interlocking member forming in association with said doubled portion, a socket to receive and frictionally to grip the yieldable terminal locking portion of the fastening means carried by the kerf of the unit, said laterally extending, doubled portion when so interlocked, yieldably engaging an outer wall portion of the kerfed unit whereby said engagement tends to maintain said interlock with said resilient terminal locking portion.

4. In combination with a side wall and a ceiling, tile means adapted to cover the ceiling, said tile means including an outermost row of tiles, said tiles having kerfs in their side walls, a sheet metal connector mounted in the kerfs and having an upstanding tongue passing substantially parallel with the side wall of the tile rearwardly of the kerf, said tongue having its end bent laterally outwardly to form angles and being substantially resilient, and an interlocking member mounted upon the vertical wall of the structure and having a lower portion bent upon itself with the doubled walls spaced apart a distance substantially equal to the width of said resilient tongue, the outermost portion of said lower portion of said interlocking member being bent outwardly away from said double lower portion whereby said reslient tongue may be snapped into the opening formed by and between said folded portion of said interlocking member and whereby said outwardly bent portion of said interlocking member may lie between the adjacent wall and the confronting side wall of said tile.

5. In combination with a vertical wall a relatively long horizontal sheet metal strip mounted on said vertical wall, said strip having a flat portion for connection with the flat vertical wall and having an outstanding flange portion at right angles to said flat portion terminating in a reversely bent, spaced, resilient portion which latter has its outer portion reversely bent inwardly and laterally to provide a relatively short terminal resilient tongue, a kerfed ceiling tile adapted in horizontal position to partly cover a portion of the ceiling adjacent the vertical wall, a sheet metal connector having a portion mounted in the kerf of the tile and having an outwardly extending flange terminating in a laterally extending resilient lip adapted to spring into position between the outstanding flange and the spaced, reversely bent portion to hold the tile to the supporting member on the vertical wall.

6. A member adapted to be fastened to a vertical wall for assisting in holding a ceiling construction in horizontal position adjacent the vertical wall comprising an elongated sheet metal form having a flat portion adapted to be fastened to the vertical wall, said flat portion having an adjoining laterally extending flange extending substantially at right angles to the flat portion, the outer portion of the laterally extending flange being bent reversely with the reversed portion being spaced from the laterally extending flange to provide an elongated socket, the reversely bent portion having a free edge bent substantially at right angles thereto to provide a resilient tongue, the outer edge of which projects outwardly in a direction outwardly diagonally with respect to the plane of the first mentioned outwardly extending flange.

7. A cooperative fastening member of the character described comprising a sheet metal form having right angled flanges, the longer flange having a laterally extending, curved, resilient toe along the outer edge thereof, said toe being of uniform width, the shorter flange having its outer edge bent upon itself to provide a resilient, relatively short fold, the free edge of the fold being on that side of the second flange that is nearer to the curved, resilient toe of the first mentioned flange.

LEON F. URBAIN.