Sept. 25, 1934. A. B. KOERNER 1,974,819

APPARATUS FOR SUSPENDING INSULATING WALLS AND CEILINGS

Filed Feb. 25, 1932 3 Sheets-Sheet 1

Fig. 1.

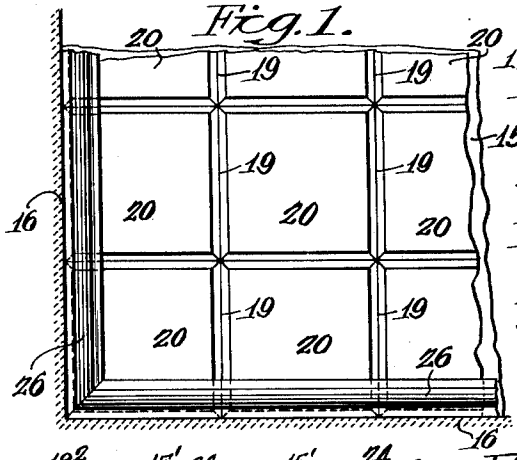


Fig. 2.

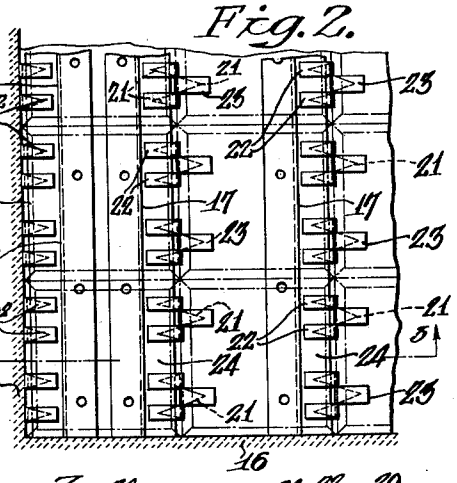


Fig. 3.

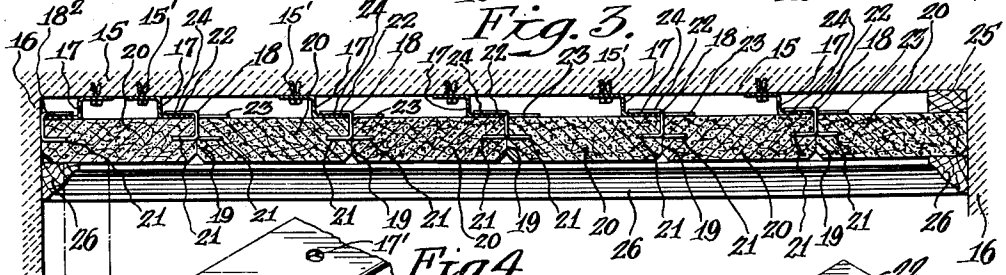


Fig. 4.

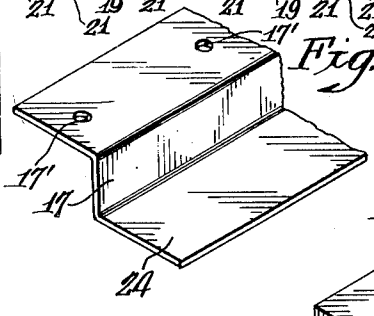


Fig. 5.

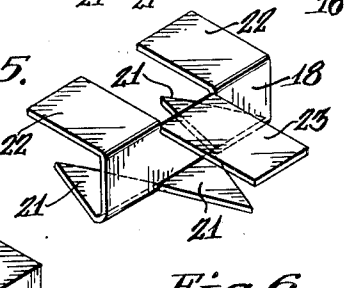


Fig. 8.

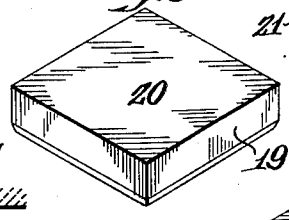


Fig. 7.

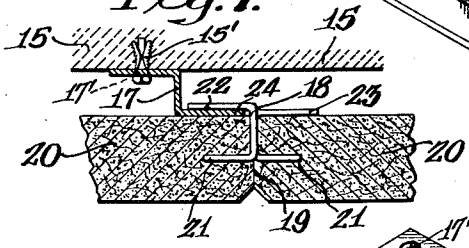


Fig. 6.

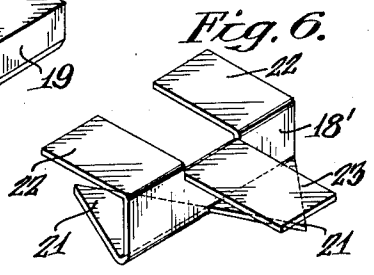
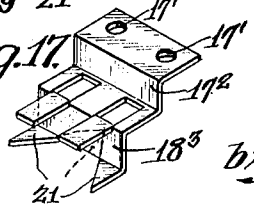


Fig. 17.



Witnesses:
Geo. C. Jepson
Ralph H. Parker

Inventor
Albert B. Koerner
by Steele Jackson and Son
Attorneys.

Sept. 25, 1934. A. B. KOERNER 1,974,819

APPARATUS FOR SUSPENDING INSULATING WALLS AND CEILINGS

Filed Feb. 25, 1932 3 Sheets-Sheet 2

Fig. 10.

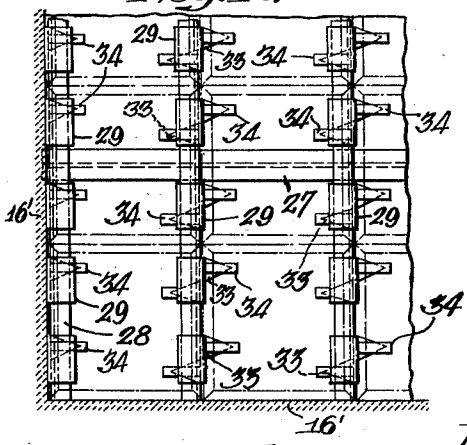


Fig. 9.

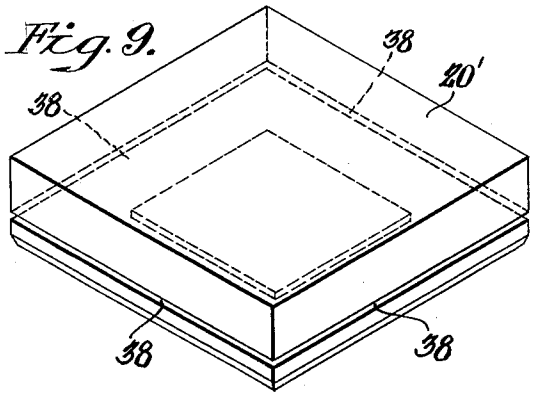


Fig. 11.

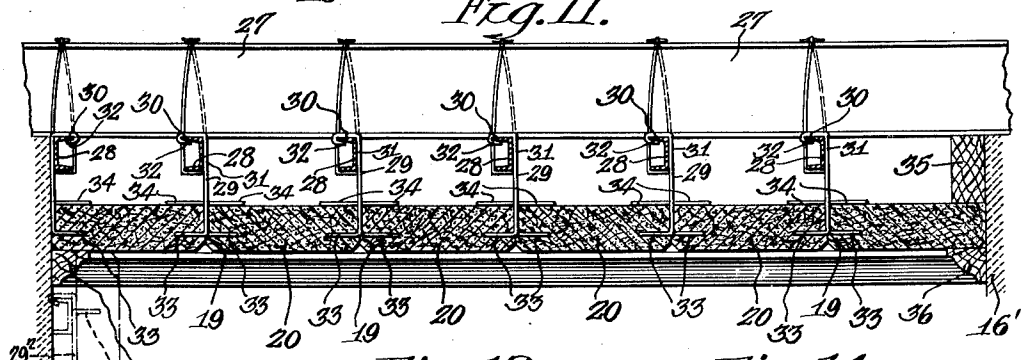


Fig. 12.

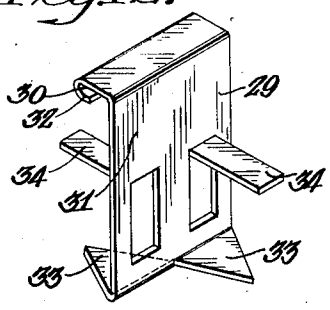


Fig. 14.

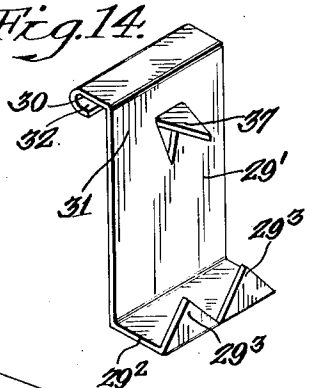


Fig. 15.

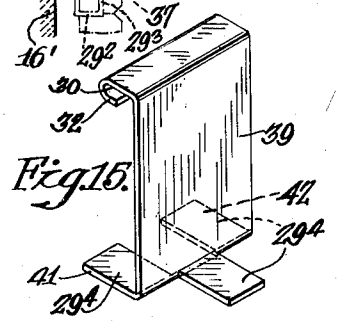


Fig. 13.

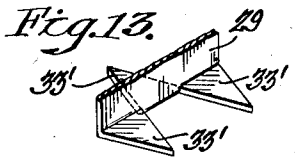
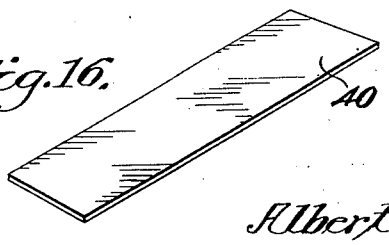


Fig. 16.



Witnesses:
Geo. B. Jepson
Ralph H. Parker

Inventor
Albert B. Koerner
by Wm. Steele Jackson and Son
Attorneys.

Sept. 25, 1934. A. B. KOERNER 1,974,819

APPARATUS FOR SUSPENDING INSULATING WALLS AND CEILINGS

Filed Feb. 25, 1932 3 Sheets-Sheet 3

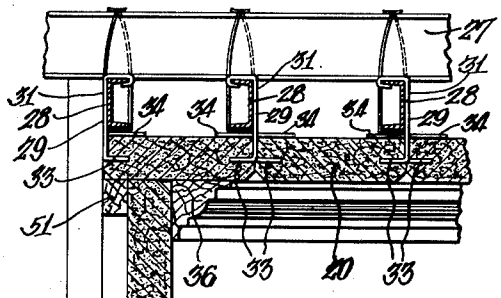
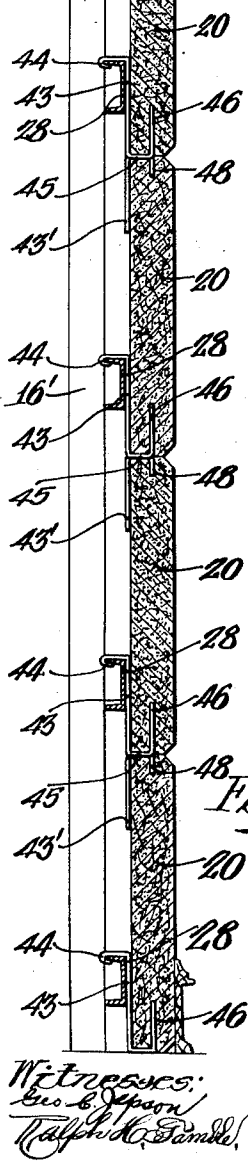


Fig. 20.



Witnesses:
Geo. B. Jepson
Ralph H. Gamble

Fig. 18.

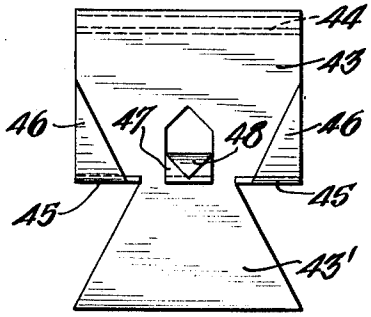


Fig. 19.

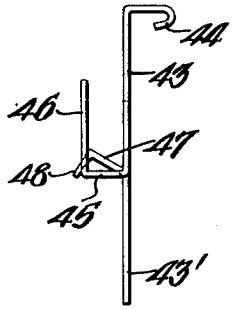


Fig. 23.

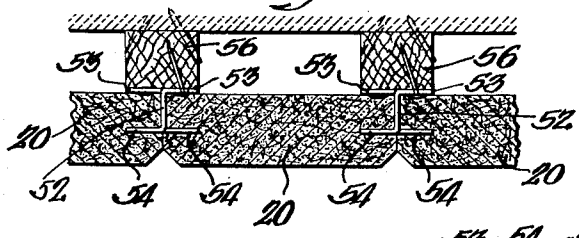


Fig. 21.

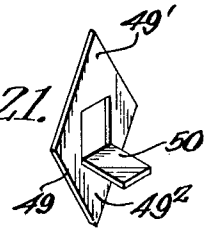
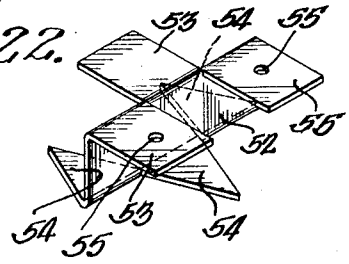


Fig. 22.



Inventor
Albert B. Koerner
by W. Stuart Jackson and Son
Attorneys.

Patented Sept. 25, 1934 1,974,819

UNITED STATES PATENT OFFICE

1,974,819

APPARATUS FOR SUSPENDING INSULATING WALLS AND CEILINGS

Albert B. Koerner, Camden, N. J.

Application February 25, 1932, Serial No. 595,128

10 Claims. (Cl. 72—118)

My invention pertains to the hanging of ceilings or side walls of sound absorbing, temperature resisting, and like insulation material in rooms that have either been completed or which are in the course of construction.

A purpose is to mount blocks of sound absorbing, temperature resisting, or like insulating material upon brackets which preferably are carried by aligning bars or strips.

A further purpose of my invention is to provide block-sustaining bars or strips which are secured to the ceiling or side walls of the room to be treated, at convenient intervals which need not correspond to block dimensions and coacting clip or bracket members which are secured to the bars or strips at one point and to the material to be suspended at another.

A further purpose is to provide insulating blocks with suitable grooves within which clips or brackets engage.

A further purpose is to provide aligning devices to fit within the grooves in the blocks, and to close the openings between the blocks against air seepage.

A further purpose is to provide pointed projections on the clips or brackets which are forced into the edges of the blocks for the purpose of holding the blocks in suspension or spacing and supporting them.

A further purpose is to provide a clip or bracket so formed as to engage a supporting bar or strip at one point, to provide an aligning projection at another and at the same time to fit within the edges of two adjacent blocks.

I have preferred to illustrate my invention by a few only of the many forms in which it may appear, selecting forms which are practical and effective but which have been chosen primarily for their value in illustrating the invention.

Figure 1 is an underface view of a fragment of a ceiling composed of insulating blocks and suspended by my devices.

Figure 2 is a top plan of the same fragment illustrated in Figure 1.

Figure 3 is a section through a plurality of insulating blocks as applied to a room, and taken on a line corresponding to 3—3 of Figure 2, the supporting clips or brackets being shown in elevation.

Figure 4 is a perspective view of a fragment of a supporting bar or strip.

Figure 5 is a perspective view of a clip or bracket used in the assemblage.

Figure 6 is a similar view of a modification of the clip or bracket shown in Figure 5.

Figure 7 is an enlarged section showing a part of Figure 3.

Figure 8 is a perspective view of one of the insulating blocks.

Figure 9 is a perspective view illustrating an alternate form of block.

Figure 10 is a fragmentary plan view similar to Figure 2 illustrating the character of clip or bracket employed in hanging the block illustrated in Figure 9.

Figure 11 is a section similar to Figure 3, illustrating the clips or brackets employed in connection with the hanging of the type of block shown in Figure 9, the clips or brackets being shown in elevation for clearness.

Figure 12 shows a detailed perspective view of a clip or bracket used in hanging the block illustrated in Figure 8, when supporting ceiling structure such as that shown in Figure 11.

Figure 13 is a fragmentary perspective view illustrating a modified form of foot for the bottom of the clip or bracket shown in Figure 12.

Figure 14 is a detailed perspective view illustrating a form of clip or bracket used in hanging a block such as illustrated in Figure 8, when covering the side walls of a structure such as that shown in Figure 11.

Figure 15 is a perspective view of a form of clip or bracket used in hanging the type of block illustrated in Figure 9, in the structure shown in Figure 11.

Figure 16 is a perspective view of a section of an aligning strip and air stop used in association with the type of block illustrated in Figure 9.

Figure 17 is a perspective view of a modified form of clip or bracket wherein the clip is integral with the supporting element.

Figure 18 is a front elevation of another form of clip or bracket used in the suspension of the wall blocks.

Figure 19 is a side elevation thereof.

Figure 20 is a sectional elevation of a side wall showing the application of the form of clip or bracket illustrated in Figures 18 and 19.

Figure 21 is a perspective view of a form of clip similar to that shown in Figure 5 and intended to be used in connection with wood furring strips.

Figure 22 is a sectional view illustrating an application of the form of clip or bracket shown in Figure 21.

Figure 23 is a perspective view of a clip intended to be inserted between the edges of two adjoining blocks to retain the blocks in alignment.

In the drawings similar numerals indicate like parts.

I show in Figures 1 to 8 a type of clip or bracket support and block assemblage used preferably in the installation of insulating ceilings or side walls in rooms which have been completed; while in Figures 9 to 16 I show an assemblage of slightly modified units, preferably applied at the time the building is being constructed.

Referring now to Figures 1, 2 and 3, 15 indicates the plastered ceiling of a room having side walls 16, 16. Bars or strips 17, shown as substantially Z shaped in cross section, are made fast to the ceiling 15 by expansion bolts 15' or any other suitable means, for example extending through holes 17', the bars or strips being spaced at regular predetermined intervals across the room to coincide with the sizes of the blocks.

Clips or brackets 18 are then hung on the lower flanges of the Z bar and attached in the side or edge walls 19 of insulating blocks 20. The latter is accomplished by forcing pointed right angle extensions 21 of the clips or brackets into the edges 19. The insulating blocks 20 are composed of materials which readily permit this insertion.

Because the bars or strips perform supporting functions which differ in the ceilings from the functions in the walls in that there is a hanging or depending support only in the ceiling but a laterally extending bracket action in the side walls, I have preferred to call them generally carrier strips to cover both. The clips or brackets also perform slightly different functions in the ceiling and side wall use, but in both of these uses part of the clip or bracket, if not all of it, performs bracket functions. For this reason, notwithstanding that clip functions are performed I have preferred to call them brackets intending to include all of the forms in this term.

At the tops the brackets 18 are turned laterally to produce right angle extensions 22 and 23 extending oppositely in divergent directions from the body portion of the bracket.

The extension 22 is slightly higher than the extension 23, and is adapted to slide over the lower horizontal extension 24 of the carrier 17, while the extension 23 is intended to lie flush on top of the insulating block 20 and act as a gauge for the attachment of the block, as clearly illustrated in Figures 3 and 7.

One form of bracket 18 is illustrated in perspective in Figure 5, and a modified form 18' in Figure 6. The only difference in these two forms is in the number of pointed projections, otherwise they are the same, and function, exactly alike.

In treating the ceiling of a room the work is started at one side of the ceiling and progresses across the room until the opposite side is reached.

The carriers 17 are fastened to the existing ceiling by means of expansion bolts or any other desirable fastener, the free bottom edges of different carriers being spaced equidistantly across the ceiling.

The first carrier at the starting side of the room, is reversed as shown at the left hand side of Figure 3, so that its free flange 24 extends in a direction opposite to the free flange extension 24 of the adjoining carriers. The brackets 17 are either shorn of their extensions at one side (or originally made without them) as indicated at 18^2 and are placed over the lower free edge of the carrier prior to fastening it in place.

One edge of each of the blocks 20 is now forced about the projections 21 of the brackets 18^2 and driven home until this edge makes contact with the wall. The top face of the block is now flush with the under face of the depending portion of the first two carriers 17, and a row of brackets 18 (preferably two brackets for each block) is positioned along the edges 19 of the blocks, their right angle extensions 22 overlapping the lower extension of the bar 17, and their projecting points 21 on the same side being wedged into the outer free edges 19 of the first row of blocks 20.

The next succeeding row of blocks is now put in place, the upper faces of the blocks being positioned under the extensions 23 on the brackets and the extensions 21 are forced into the edges 19 as was the preceding row.

This operation is continued across the entire room, the bracket projections 22 being placed over the lower extension of the carrier and the pointed projections 21 being forced into the body of the block at the edges 19 to support them. At the side wall where the last block is placed, a spacing strip 25 is fastened in the corner and the last row of blocks is positioned against it. This last row is finally secured in position by the application of the moulding 26, which is carried entirely around the room as a finish.

When it is desired to cover the side walls with the insulating blocks, the carriers are fastened to the side walls just as they are fastened to the ceiling, the outer free edge being placed so that its flange points upwardly toward the ceiling. This is indicated in the drawings in Figure 3 and is shown in dot-and-dash lines at the left of the figure and against the side wall 16.

The clips 18 are used in the same manner as in the ceiling installation, the extensions 22 being hooked over the free ends of the carriers and the two way extensions 21 being embedded in the edges of the blocks while the extensions 23 form a guide for the placing of the blocks.

In the installation of new work, i. e. where the building is in the course of erection and prior to plastering, the form of clip varies to accommodate the slight change in conditions. Illustrations showing this form of structure are best seen in Figures 9 to 16.

In this form I not only save the work of plastering, but no lath need be applied to the lathing channels. The insulating block itself forms the ceiling and side wall of the room. These blocks can have a pleasing surface and be furnished in any tint, thereby eliminating the necessity of papering or painting or otherwise treating when used in rooms requiring decorating.

Supporting beams are indicated at 27 to which are fastened plastering channels 28 as in the usual form of construction employing metal lath. In place of fastening metal lath to the channels, I hook brackets 29 over their tops. These brackets are designed to extend about and beneath the upper flange of the channel, resting at 30 on the top of the flange, and hang downwardly at 31 to engage against the broad face of the channel. The hook portion of the bracket is indicated at 32. The bracket carries right and left hand, pointed, right angle fingers 33, which may be in the form of tines or prongs adapted to be forced into the edges of the blocks in the same manner as the extensions 21.

I further provide right and left right angle projections 34 which act as gauges, the same as extension 23 of clip 17. These projections are formed by punching out portions of the brackets and bending them in opposite directions at right angles to the bracket.

The method of hanging the blocks in this form

is identical with that previously described. Beginning at one side of the room (in the present showing the left) the first channel is reversed and the fingers (prongs) on that side of the bracket away from the hook are removed. The edges of the blocks are forced into the prongs of the series of brackets hanging from the first channel and the left hand prongs on the row of brackets hanging from the second channel are forced into the adjacent edges of the same row of blocks. The second row of blocks are next put in place by forcing the edges of their blocks into the right hand prongs of the clips on the second channel, and bringing the brackets on the third channel into engagement to hold the opposite edge of that, the second row of blocks.

This operation is continued until the entire ceiling has been covered, the last row of blocks being spaced by a strip 35 and held finally in place by the application of a moulding 36. In each case the projections 34 act as gauges to determine the position of the blocks with respect to the brackets.

The clips are illustrated in perspective in Figure 12, and an alternate form of foot is shown in Figure 13, at 33'.

When it is desired to apply the blocks to form side walls, I fasten the channel irons 28 direct to the studding 16' of the rooms and hang therefrom a slightly modified form of bracket 29' as illustrated in Figure 14. This bracket hooks over the channel the same as the form seen at 29, and has the same vertical body portion. Its main difference is the right angle fingers 29^2 at the bottom of the vertical portion which end in upward terminals 29^3. This form includes one or more sharp prongs which are adapted to be forced into the bottom edge of one of the blocks 20 to hold the block in place upon the finger at the same time it is being supported by the finger.

A prong 37 is struck out from the vertical wall of the bracket and the block is forced about it until the prong is entirely embedded in the block, thereby offering additional retention means for the block 20.

An application of this type of bracket is shown in dot-and-dash lines to form a portion of the left wall of Figure 11.

In Figure 9 I have shown a type of block 20' which is similar to the block 20 previously described but with the exception that it has a groove 38 formed or cut in the edge and running completely around the block. When using this block I employ the form of bracket 39 illustrated in Figure 15. This bracket is identical with the bracket 29 except that the fingers 29^4 have square ends, are without points, and are adapted to fit within the grooves 38 of the block 20'.

The blocks are thus hung by the brackets and depend upon the positioning of the grooves in the blocks and their relation to the fingers for accurate alignment.

Where these grooved blocks are used, I further employ flat metal strips 40, Figure 16, extending between the brackets in one direction and extending continuously in the other direction, to assist in holding the blocks in proper alignment and at the same time to prevent air from leaking through the joints between the blocks. The strips 40 are positioned so as to lie half in one block and half in the adjoining block and are run in both directions of the room, thereby closing the lateral as well as the longitudinal joints between the blocks. At each end of the strips 40 which run in the direction of the brackets, the strips abut against the edges 41 or 42 of the brackets 39.

Figure 17 shows a further modification of a supporting clip at 18^3, wherein the clip is made integral with the supporting or Z bar 17^2. In this case the Z bar is not continuous, but is the same width as the clip, and each clip has provision for nailing to the ceiling or side walls.

In the form of my invention shown in Figures 18, 19 and 20, I show another wall clip or bracket which has the same function as that illustrated in Figure 14; but here all the retention projections enter the edges of the blocks and none enters the face as in Figure 14. In this design the clip or bracket is stamped or otherwise produced from a single piece and comprises a body 43, having at its upper extremity a hooked portion 44 identical with the hook 32 in Figures 12, 14 and 15. About midway of the body portion 43 and at each side are located finger rests 45 which terminate in upwardly extending pointed projections 46.

After the fingers 45 have been turned out a depending section 43' of the body portion 43 remains which extends below the fingers and resembles a dovetail in outline.

Struck from the center of the body portion is a finger 47 which terminates in a downwardly extending pointed projection 48.

Figures 18 and 19 illustrate a front view and side elevation respectively of the clip or bracket ready for use, and Figure 20 shows the bracket applied to the blocks to form a wall. In this last view the supporting channels are fastened to the studs the same as in the forms shown in Figures 3 and 12, and the clips or brackets are fastened to the channels by their hook ends 44. The clips or brackets hang from the channel bars just as in the other forms of wall installation and are so positioned in their relation to the channel as to bring their extending fingers 45 between the joining edges of two wall blocks, so that the fingers lie over one of them and under another. The upwardly extending fingers 46 engage and hold the block above, and the downwardly extending fingers 48 are struck down in order to enter and hold the block below.

In assembling a wall the first channel is positioned at or near the floor line. The lower dovetailed portions 43' are then removed from the clips or brackets intended for the first course, as are the fingers 47 and their pointed extensions 48. The brackets are then hung over the channel rails at the required positions with the fingers 46 resting at or near the floor.

In the first course the blocks are then forced into place, the upwardly projecting extensions 46 being embedded in the lower edges of the blocks. The upper block edges of this first course are moved under the fingers 45 of the clips or brackets hanging from the next channel above, and are forced back until the rear block faces contact with the depending portions 43', against which they rest. The fingers 47 are then struck with a hammer or other suitable tool and caused to move down until they are flush with the top edges of the blocks and their pointed projections 48 are embedded in the blocks.

The blocks of the first course are now held at their bottoms and at their tops. Should it be desired to fasten them at their side edges, I provide a clip such as is illustrated at 49 in Figure 21. This clip is substantially diamond shape having point 49' at one end, and a point 49^2 at the opposite end. A tongue 50 is struck out from the body of each clip to form a stop to limit the distance to which the clips can be inserted within the edges of the blocks. When

used as side edge retention members, one point of each clip is inserted into a block edge until the tongue is flush with the edge. The next block is then forced against the second point until it is entirely embedded within the edge of the second block and with the tongue 50 lying between the two blocks, and so on.

As many of these side edge clips 49 as desired can be employed to hold the blocks in alignment.

When the first course of blocks has been positioned entirely around the room, the second course is started. The lower edges of the blocks of this course are forced about the pointed extensions 46 of the clips or brackets handing upon the second channel bar to secure them at their bottoms, and are brought into contact at their tops with the depending ends 43' of the clips or brackets hung from the next channel supporting bar above. This second row or course is then made fast at its top by moving the pointed projections 48 downward and into the top edges. Side edge interlockings by means of clips 49 are made at desired points during assemblage.

The blocks are built up in successive rows and hung from the supporting channels by the clips or brackets until the entire wall is completed and the blocks of the last row are supported with their upper edges adjacent the ceiling blocks. The rear face of each block bears against a spacing strip 51 to align the last course perpendicularly. This strip 51 could also be used as a support for the blocks of the first ceiling row if desired. Suitable molding is applied around the entire room at the ceiling line as in Figures 3 and 11 as a finish at this point, while the floor line can be faced with a suitable base molding as in any finished room.

In Figure 22 I have shown a clip or bracket 52 which is quite similar to clip 18, Figure 5. The clip 52 has top lateral extensions 53 and bottom pointed lateral extensions 54. The upper extensions 53 are apertured at 55 for the reception of nails or other fastening devices to permit of their attachment to a strip of wood 56 (Figure 23). The wood strips are an alternative for the Z bars 17 or channel supports 28. In each case the lower pointed extensions are out of line with the upper extensions to permit access to the latter for purposes of nailing.

In application of the type shown in Figures 22 and 23, the strips 56 are first made fast to the ceiling and spaced to accommodate the joints of the various blocks. Clips 52 are now fastened to the strips which are to receive the initial blocks. The blocks are next forced in place against the projections and the clips of the second series are then forced into the outer free edges of the blocks and are fastened to the strips 56. Row after row is thus added until the ceiling or wall is completed. This design of clip or bracket lends itself admirably to the application of blocks in patterns or mosaic effects, especially when assisted by the form of clip illustrated in Figure 21.

As will be observed in any of my arrangements of blocks, they do not lie adjacent the walls or their supports, but are held a sufficient distance therefrom to create an air space between the rear of the blocks and the adjacent ceiling or side wall. This air space acts as an additional insulator, assisting the blocks in their retardation of the passage of sound, vibration and heat.

It will be evident that the blocks making up the exposed surface of the wall are normally supported by the brackets or clips in such a way that no portion of the brackets or clips are exposed at the finished surface of the wall. The lateral attachment of the brackets or clips to the blocks firmly engages the blocks on both sides of an individual bracket or clip, preventing relative movement of the blocks toward or away from the wall support and also supporting the blocks against movement longitudinally of the wall in either direction.

The blocks normally have sufficient resilience so that the slight tendency of the brackets or clips to space adjoining blocks is overcome, and the adjoining edges of the blocks are in tight contact, leaving no crack between adjacent blocks. Where the blocks lack in resilience, I may of course groove the edges to receive the brackets or clips.

The preferred application of my invention, although by no means the only one in which it may be used, is for the construction of sound deadening walls (either side walls or ceilings).

For this purpose, the wall itself must be soft and resilient, and it is therefore of course not possible to plaster or otherwise apply a coating to the blocks, other than a coating of paint, as plaster or similar material will destroy the sound deadening properties. It will be therefore evident that the supporting means of my invention permits the blocks to be exposed to view in the finished room, without the necessity for exposed portions of the supporting means beyond the blocks, nailing or even toe nailing through the blocks or making screw or glue attachments to the blocks.

In referring to a wall, I intend to include both a side wall and a ceiling, and in referring to a wall support I mean to designate the structure within a wall, whether a side wall or a ceiling.

In view of my invention and disclosure variations and modifications to meet individual whim or particular need will doubtless become evident to others skilled in the art, to obtain part or all of the benefits of my invention without copying the structure shown, and I, therefore, claim all such in so far as they fall within the reasonable spirit and scope of my invention.

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

1. In a wall, a wall support, a plurality of laterally spaced bars fastened to the outer face of the support and presenting outer faces outwardly spaced from and generally parallel to the support, a block against the bars and having its finished face in position to form a portion of the intended wall and spaced from the wall support sufficiently to leave a dead space between the wall support and the block, and clips or brackets securing the blocks against the outer faces of the bars and having integral outer ends embedded in opposite edges of the block, the said clips or brackets having lengths less than that of the abutting block edges and being wholly inwardly of the outer face of the block.

2. In a wall, a wall support, a Z bar secured to the wall support and extending parallel to the surface of the intended wall, a block having its finished face on the line of the intended wall and its inner face against the outer face of the Z bar and a clip or bracket engaging the bar on the inside of the outer flange thereof, extending out from it and having a finger near its outer end and integral therewith embedded in the edge of the block.

3. In a wall, a wall support, a plurality of later-

ally spaced Z bars secured to the wall support and extending parallel to the intended wall, a plurality of blocks edge to edge having their finished faces on the line of the intended wall and widths in the said lateral direction substantially equal to the said spacing of the bars, and clips or brackets hooking to the bars, extending from the bars to between the edges of adjoining blocks and having fingers near the outer ends of each clip or bracket embedded in the abutting edges of adjoining blocks, the said clips or brackets being wholly inwardly from the outer surfaces of the blocks permitting the blocks to present a finish wall surface at the time of erection.

4. In an insulating wall, supporting bars fastened directly to the wall and running the length of the surface to be insulated, a plurality of clips or brackets suspended from the bars, extensions from the bars for receiving extensions from the clips or brackets, the extensions of the bars and clips being located longitudinally of each other and extensions adapted to lie between the edges of adjacent insulating blocks, and to enter the edges to support the blocks, and insulating blocks held by the clips or brackets, the clips or brackets being invisible when viewed from the face comprising the finished surface of the supported blocks, and the clip or brackets having lengths less than that of the said abutting edges of the blocks.

5. In a support for insulating blocks, supporting bars fast to and running the length of the surface to be insulated, clips or brackets suspended from the bars and adapted to lie between the edges of adjacent insulating blocks and projections on the clips or brackets, integral therewith, some entering a peripheral slot in one block and others entering a peripheral slot in the adjacent block at points back of the face thereof, and the clip or brackets having lengths less than that of the said abutting edges of the blocks.

6. A support for insulating blocks, comprising a bar running the length of the surface to be insulated, brackets carried by the bar and movable thereon, finger projections extending outwardly from the body of the bracket, pointed extensions on the fingers lying in a plane parallel to the body of the bracket and adapted to enter the edge of the insulating blocks, and pointed projections formed from the body portion of and extending at right angles to the body portion of the bracket and adapted to enter the rear face of the insulating blocks.

7. In a support for insulating blocks, a bar running the length of the surface to be insulated, and a bracket carried by the bar and movable thereon, and comprising a body portion, a substantially hook head portion and pointed substantially right angle projections formed integral with the body portion and adapted to enter one face of the insulating block.

8. A support for insulating blocks comprising a bar running the length of the surface to be insulated, brackets supported by the bar, finger projections extending outwardly from the body of the bracket, pointed extensions terminating the finger projections and a second finger projection extending outwardly at an angle from the body portion and terminating in a pointed extension, the latter extension being adapted to be forced into a right angle position with respect to the body portion.

9. In a wall, a block having a peripheral slot between its front and its rear faces, a plurality of hangers on opposite sides of the block, narrower than a side of the block, each having a projection extended behind the rear face of the block, adjoining blocks having peripheral slots and other projections from the hangers extended into the peripheral slots of the adjoining blocks and extended behind the rear faces of the adjoining blocks and means for securing the hangers in position.

10. In a wall construction for a building, a plurality of blocks one beside another having flat sides in abutment, and having peripheral slots extending entirely around each block in a plane between the front and the rear surface of each block, hangers extending between the side surfaces of abutting blocks having projections into the slots of adjoining blocks on opposite sides of the hangers and at the inward ends of the hangers whereby the hangers are not visible on the finished face of the wall, each hanger being narrower than the side of one block, and means for securing the hangers to the permanent structure of the wall.

ALBERT B. KOERNER.