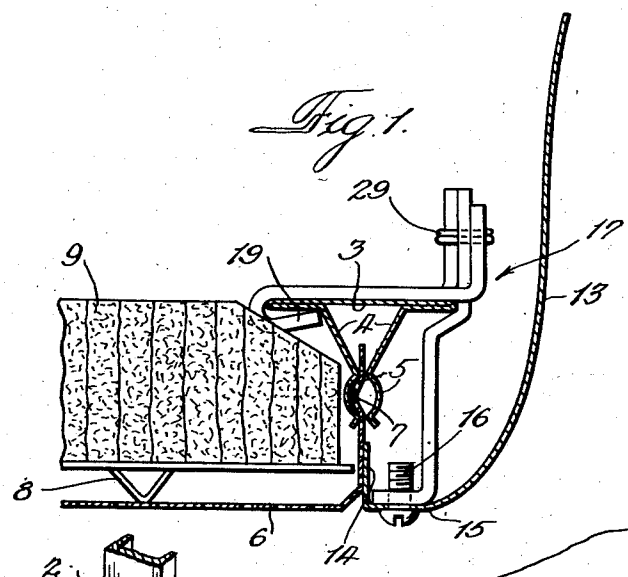
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BUILDING ASSEMBLY AND BRACKET THEREFOR

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Fig. 1.



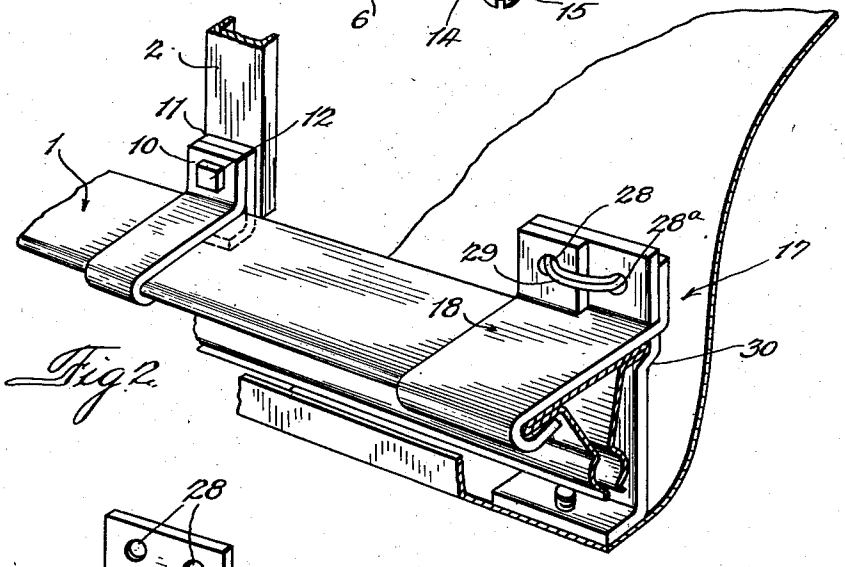


Fig. 2.

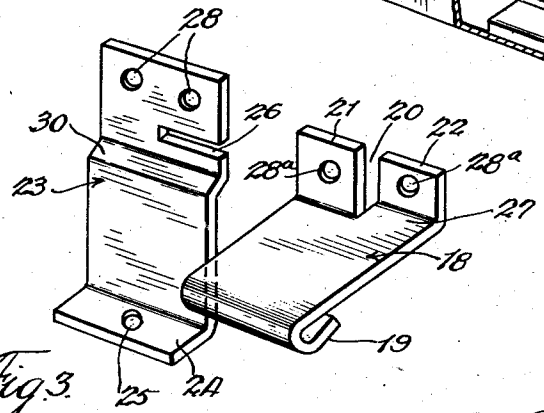


Fig. 3.

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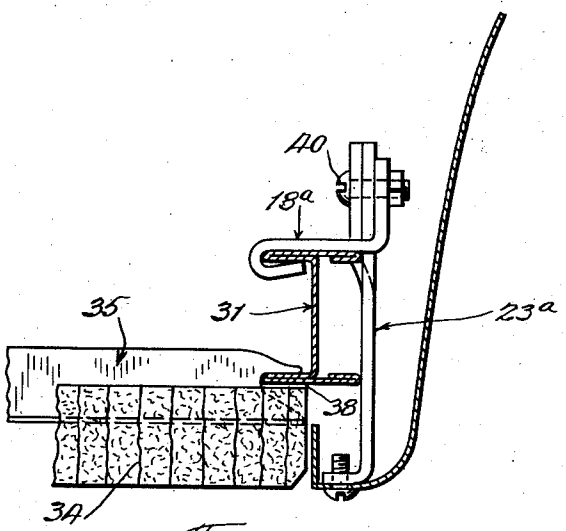


Fig. 4.

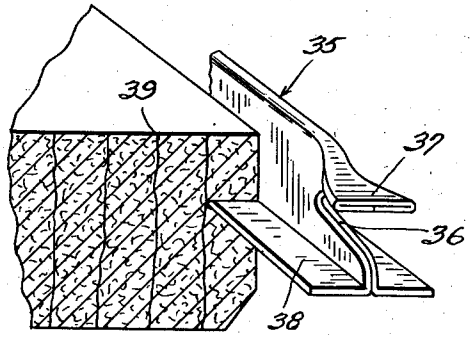


Fig. 5.

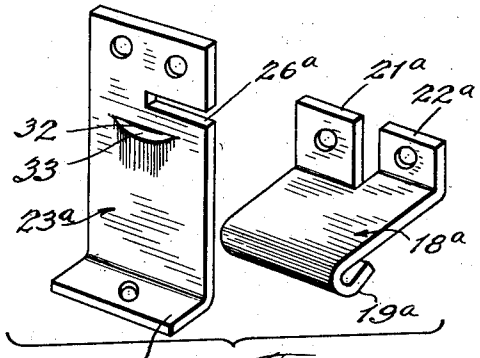


Fig. 6.

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UNITED STATES PATENT OFFICE

2,304,480

BUILDING ASSEMBLY AND BRACKET THEREFOR

Albert A. Schramm, Chicago, Ill., assignor to United States Gypsum Company, Chicago, Ill., a corporation of Illinois

Application June 27, 1940, Serial No. 342,675

11 Claims. (Cl. 189—35)

This invention relates to building assemblies, and more particularly to ceiling structures including brackets or clips for use in connection with a ceiling runner to support elements such as trough reflectors or so-called coffer reflectors in ceiling structures.

The invention is especially adaptable for use in structures similar to that disclosed in my co-pending joint application Serial No. 333,462 filed May 6, 1940. The structure disclosed in the said co-pending application comprises a suitable framework suspended from a permanent ceiling or other sub-structure and supporting preformed perforated or foraminous tile and sound absorbent material on suitable horizontal furring strips or runners. The framework is provided with depending hangers which are aligned in rows and may comprise channel irons of any suitable type. The hangers are spaced throughout the ceiling structure to provide alternate panel spaces and coffer spaces between rows of hangers, and the downwardly extending arms of the hangers are arranged to support suitable sheet metal runners, which latter may be secured to the hangers in any suitable manner, preferably by brackets such as will be described later. Each runner preferably comprises a horizontal body portion having inturned edges and downwardly extending converging flanges, the flanges being provided at their lower edges with beads which are adapted to receive the upwardly extending flanges of preformed perforated metal panels therebetween and which extend in one direction from the runner to form a ceiling surface. Other brackets are provided which are longitudinally adjustable on the runners and extend below the runners, and are constructed to support coffer reflectors with their lower edges substantially in alignment with the panel ceiling surface.

The brackets of the present invention are adapted for use in connection with various types of runners. For instance, in some cases I-beam runners are used and acoustical tile or tile of any desired nature are supported on the lower flanges of the runners and provide a ceiling surface material below the runners. In any case, the brackets of the present invention comprise at least two elements arranged to interlock with the runner and with each other whereby the bracket is longitudinally adjustable on the runner so that the reflector may be supported in the required position, and so that the brackets may be adjusted along the runner to conform with the preformed securing holes in the edge or flange of the reflector.

It is an object of the present invention to provide a ceiling assembly, including adjustable brackets, in which at least portions of the brackets may be secured to the reflector by bench or floor assembly, and then may be placed in position and the bracket members interlocked with each other and with the runner so that all of the ceiling elements are brought into the required alignment and in supporting relationship without the use of tools and without the necessity of fastening means other than the brackets themselves.

A further object is the provision of a runner bracket which will be of few parts, cheap to manufacture, easy to assemble, and will retain the ceiling elements in their desired relationship.

Further objects will be apparent from the specification and the appended claims.

In the drawings:

Figure 1 is a fragmentary sectional view through an acoustical ceiling structure, including a runner and associated coffer reflector supported thereon.

Fig. 2 is a fragmentary perspective view of the assembly shown in Fig. 1 with the tile removed.

Fig. 3 is a perspective view of the bracket elements shown in Figs. 1 and 2 before assembly on a runner.

Fig. 4 is a view similar to Fig. 1, but discloses a slightly different embodiment of bracket for use in connection with an I-beam runner.

Fig. 5 is a fragmentary perspective view showing the acoustical tile of Fig. 4 and the support therefor.

Fig. 6 is a perspective view of the bracket elements shown in Fig. 4.

Referring to the drawings in detail, the embodiment illustrated in Figs. 1 to 3, inclusive, comprises a runner 1 which may be secured to the depending hangers 2, the latter being arranged in rows on a suitable framework such as described in the previously mentioned co-pending application. Each of the runners 1 comprises a horizontal body portion 3 having inturned edges with downwardly extending converging flanges 4. The flanges 4 are provided adjacent their lower ends with beads 5 adapted to receive the upwardly extending flanges of preformed perforated metal panels 6 in the manner shown in Fig. 1 to thereby support the panels. The flanges of the panels 6 are each provided with a bead 7 for co-operation with the beads 5 of the runners. By this construction a row of panels may removably be mounted between adjacent runners and a grid or rack 8 may be supported in each

panel and may be made of wire or any suitable construction to support a sound absorbent pad 9 in spaced relation to the panel or tile.

The runners 1 are secured to the hangers 2 by means of suitable bracket members 10 and 11 which are arranged to embrace the runner flanges and are secured to the hangers 2 by means of wire 12. A coffer reflector 13 which may be identical with the reflector disclosed in the previously mentioned co-pending application is provided with an upturned flange 14 and with spaced screw holes 15 along the horizontal edge of the reflector to receive screws 16, which latter may be threaded into the downwardly extending arms of brackets 17, a plurality of which are supported for longitudinal adjustment on the runner 1.

Each of the brackets 17 comprises a pair of strap-like members, such as shown in Fig. 3. The upper member 18 is provided with a horizontal portion adapted to extend over the upper surface of the runner 1 and having a hook portion 19 at its outer end adapted to engage around the outer flange of the runner. The inner end of the member 18 is split at 20 and is provided with upturned spaced parallel flanges 21 and 22 which are positioned to provide a space therebetween substantially equal to the thickness of a vertical bracket member 23 constructed to interlock therewith.

The bracket member 23 is elongated and is provided at its lower end with an outturned flange 24 having a threaded opening 25 therein adapted to receive one of the reflector screws 16 so that the reflector may be secured thereto. The member 23 is provided with a transverse slot 26 so that the upper end of the member may extend through the space 20 of the bracket member 18 and interlock with the narrow extended portion 27 thereof. The slot 26 is of sufficient depth so that when the members are interlocked they are in alignment, and the upper end of the member 23 and the flanges 21 and 22 may be provided with aligned openings 28 and 28*a*, respectively, so that, after the members are interlocked, they may be secured together by means of wire 29 (Fig. 1). The wire, however, is not essential, for the reason that, after the ceiling is completely assembled, the reflectors are held against lateral movement by their association with other ceiling members so that the bracket members will remain interlocked without the use of any securing means.

The bracket member 23 is provided adjacent the slot 26 with an offset 30 which provides a shoulder for engaging under the inner flange of the runner 1, as shown in Figs. 1 and 2. By this construction it will be apparent that, in order to assemble the structure, it is only necessary to secure the runners in position on the hangers 2 and interlock the brackets thereon by relative lateral movement. The brackets are longitudinally adjustable on the runners so that they may be positioned in accordance with the screw holes 15 in the reflectors. It will also be apparent that the reflectors may be secured to the brackets after the brackets are positioned on the runners, or the bracket members 23 may be assembled with the reflectors on the floor or bench.

Figs. 4, 5, and 6 illustrate an embodiment in which an I-beam runner 31 is used instead of the runner 1 previously described. In this embodiment the bracket is similar to that previously described, but is modified slightly for use in connection with the I-beam type of runner. The bracket member 18*a* is formed in the same manner as the bracket 18 previously described, but of dimensions suitable for the type of runner used. The depending bracket 23*a* is also similar to the bracket 23, except that the offset shoulder 30 is omitted and, instead, the material is sheared at 32 and formed inwardly to provide a shoulder 33 to engage under the inner flange of the I-beam 31. In all other respects the bracket may be substantially identical with that previously described. This assembly is particularly adapted for use where acoustical tile 34 are used and the perforated metal tile are omitted. T-bars 35 have their ends notched at 36 and are flattened at 37 to engage and be supported upon the lower flange 38 of the runner. A number of these inverted T-bars are used to support the acoustical tile in the usual manner, and are provided with flanges 38 which extend into slots 39 in the tile. The flattened ends 37 prevent tilting of the bar on the runner flange.

The bracket members 18*a* and 23*a* may be secured together by wire as previously described or by bolts 40 if desired. Cotter pins may also be used for this purpose. These brackets are assembled in the same manner as those previously described, and are mounted by first placing the bracket member 18 on the runner as shown in Fig. 4 and then moving the bracket member 23*a* to interlock therewith.

It is intended, of course, that the invention should not be limited to the specific embodiment or embodiments disclosed herein, since modifications may be made, and it is contemplated, therefore, by the appended claims, to cover any such modifications as fall within the true spirit and scope of this invention.

Having thus described this invention, what is claimed and desired to be secured by Letters Patent is:

1. A bracket comprising two strap-like elements constructed to be placed one on top of a ceiling runner and one adjacent the side of said runner, one of said elements having a transverse slot opening from one edge thereof and the other element having a portion of reduced width so that said elements are interlocked with each other and with said runner by relative lateral movement, one of said elements being formed to enable a ceiling element to be secured thereto.

2. A bracket comprising two strap-like elements constructed to be placed one on top of a ceiling runner and one adjacent the side of said runner, said elements being interlocked with each other and with said runner by relative lateral movement, one of said elements being formed to enable a ceiling element to be secured thereto, and lateral flanges on one element for engaging the other element therebetween to maintain said assembled elements in substantially fixed angular relationship.

3. A building bracket comprising a horizontal strap having a downturned hook at one end, the opposite end being split and the ends turned upwardly in parallel spaced relation to form flanges, a vertical strap having a transverse slot interlocked with said first strap between said flanges and extending under said first strap in opposed relation to said hook.

4. A bracket for a building runner comprising a metal strap having one end formed in one direction to provide a hook capable of engaging around the flange of said runner and the opposite end formed in the opposite direction to provide spaced parallel transverse flanges; a sec-

ond strap positioned between said flanges and having a transverse slot interlocking with said first strap so that said straps are assembled substantially in the same plane by relative lateral movement, said second strap being formed to engage under a runner flange in opposed relation to said hook.

5. A reflector supporting bracket for a ceiling runner, comprising a strap-like member formed to engage around one edge of said runner and extend over the top thereof to the opposite edge, said member having a portion upturned to form a vertical flange with its outer face substantially flush with said opposite edge of said runner, and an upturned flange spaced outwardly from said first flange and parallel therewith, a depending bracket member having a transverse slot with that portion of said first member lying between said flanges being positioned in said slot with said members interlocked by transverse relative movement of said members.

6. In a reflector supporting bracket for a ceiling structure having a supporting runner, a hook-like member adapted to embrace one edge of said runner and extend to an opposite edge and terminating in laterally extending offset flanges in different parallel planes, and a reflector supporting member slotted to receive said first member and interlocked therewith between said flanges and extending at substantially a right angle from said first member, said reflector supporting member having a portion engaging under said opposite edge of said runner and extending beyond said runner and terminating in a lateral flange adapted to support a reflector.

7. A reflector supporting bracket for a ceiling runner comprising a horizontal metal strap having one end formed to slidably embrace a runner flange with said strap extending transversely thereover to the edge of the opposite flange, the free end of said strap being split and the ends bent upwardly to form parallel spaced transverse flanges, a vertical strap transversely slotted and interlocked between said flanges, said vertical strap being formed to cooperate with said horizontal strap to lock said runner flange therebetween and being formed at its lower end to provide a support for a ceiling element, and means cooperating with said flanges to secure said straps in interlocked relation.

8. A building bracket comprising a horizontal strap having a downturned hook at one end, the opposite end being split and the ends turned upwardly in parallel spaced relation to form flanges, a vertical strap having a transverse slot adapted to receive and interlocked with said first strap between said flanges and extending under said first strap in opposed relation to said hook, said flanges and said vertical strap having registering holes therethrough so that said straps may be secured together by tying with wire or the like through said holes.

9. In a ceiling assembly having a horizontal substantially T-shaped runner, with panels supported on said runner and extending from one side thereof to form a ceiling surface materially below said runner, reflector supporting brackets longitudinally adjustable on said runner, said brackets comprising two strap-like members having tongue and slot portions interlocked by relative lateral movement and formed to thereby extend over the top of and embrace the T-head of said runner so that said members are substantially in the same vertical plane transversely of said runner, one of said members extending downwardly below said runner and closely adjacent said ceiling surface, so that a coffer reflector secured against the lower end of said last mentioned member will have its lower edges substantially flush with said ceiling surface.

10. In a ceiling assembly, the combination with a horizontal I-beam runner having panels supported on one lower flange of said runner and forming a ceiling surface below said runner and a coffer reflector having its lower edges substantially flush with said ceiling surface, of a reflector supporting bracket longitudinally adjustable on said runner and comprising two strap-like members having co-operating slot and tongue portions and interlocked by relative lateral movement so that said members embrace the upper flanges of said I-runner, one of said members extending downwardly and under said runner adjacent the edge of said panel and constructed and positioned to enable the edge of said coffer reflector to be secured thereto with said edge substantially flush with said ceiling surface.

11. In a ceiling structure, the combination with a ceiling runner for supporting surfacing elements suspended therefrom, said runner having its upper surface terminating in laterally extending longitudinal flanges, of a bracket comprising two interlocking strap-like members, one of said members having an open end transverse slot from one edge thereof and the other member having a portion adapted to interlock in said slot by relative transverse lateral movement of said members, said members being formed so that when interlocked the bracket extends over the top of said runner and embraces said flanges and forms an arm extending downwardly below said runner and at one side of the central longitudinal plane thereof and terminating in a portion adapted to support a coffer reflector secured thereto.

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