

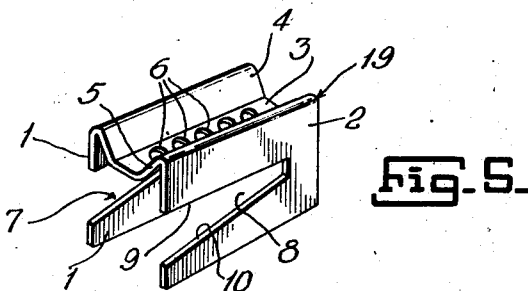
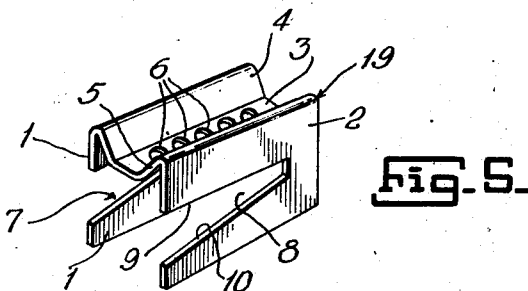
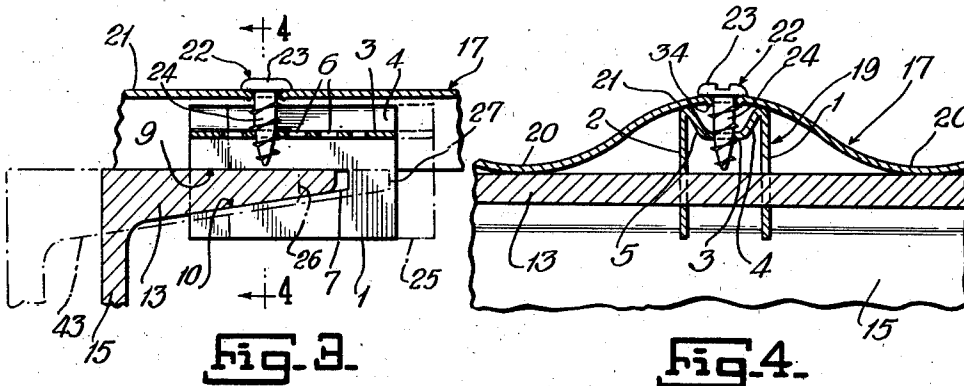
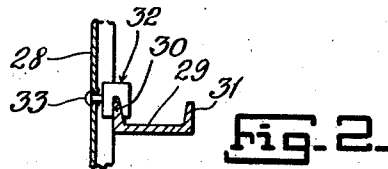
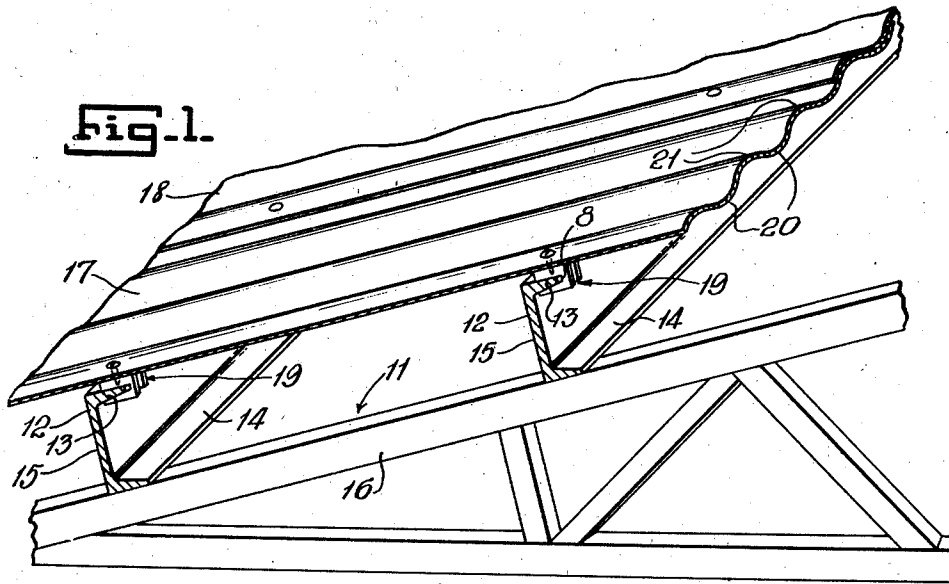
Aug. 26, 1947.

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2,426,237

CLIP FOR SHEET METAL PARTITIONS

Filed May 16, 1945



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2,426,237

CLIP FOR SHEET METAL PARTITIONS

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Application May 16, 1945, Serial No. 594,018

3 Claims. (Cl. 189—35)

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This invention relates to clips for sheet metal partitions in general and more particularly to clips for sheet metal partitions such as corrugated sheet metal roofing and the like.

Among the objects of the present invention it is aimed to provide an improved clip for sheet metal partitions, more particularly for corrugated sheet metal roofing which can be quickly positioned on a job in the field, and which entails a minimum amount of labor and also a minimum amount of skill, effectively and efficiently to secure a sheet metal partition to a frame.

It is still another object of the present invention to provide an improved clip for a sheet metal partition such as a corrugated sheet metal roof that can be manufactured at a minimum of cost and require a minimum amount of material.

These and other features, capabilities and advantages of the invention will appear from the subjoined detail description of one specific embodiment thereof illustrated in the accompanying drawing in which

Fig. 1 is a fragmental perspective partly in section showing a roofing construction with the clips constituting the present invention.

Fig. 2 is a fragmental section showing a vertical wall or partition secured to a purlin, U-beam or the like by a clip made according to the present invention.

Fig. 3 is a fragmental section showing a sheet metal partition secured to a purlin.

Fig. 4 is a section on the line 4—4 in Fig. 3.

Fig. 5 is a perspective of one of the clips detached.

The clip constituting the main part of the present invention shown in Fig. 5 consists essentially of a sheet metal stamping composed of two legs 1 and 2 with a connecting web 3. The web 3 in turn forms the lower section of a trough-like formation connected to the legs 1 and 2 by the inclined webs 4 and 5 respectively.

The web 3 is preferably provided with a plurality of openings 6 formed in a row, one adjacent to the other. Excellent results have been achieved when the openings 6 are five in number for a web $1\frac{1}{2}$ inches long with the openings about $\frac{1}{8}$ of an inch in diameter and spaced from one another a little less than $\frac{1}{8}$ of an inch as shown in Figs. 3 and 5. The legs 1 and 2 in turn are provided with elongated recesses 7 and 8 respectively, parallel to one another, defined by an upper edge 9 substantially parallel to the upper edge of the leg 1, 2 and the lower edge 10 flaring downwardly away from the upper edge 9 to form a recess diverging in an outward direction.

The size of the clips shown in Fig. 5 and gauge of metal used may of course vary without departing from the inventive concept.

The clips may to good advantage be used in

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attaching a corrugated sheet metal roof to purlins as shown in Fig. 1. In the illustration there is shown a frame 11 on which are mounted the purlins 12 in the usual way. These purlins frequently are five inches in height, when they have converging extensions 13 and 14 inclining outwardly from the connecting web 15 as shown. The extensions 14 are secured to the beam 16 of the frame 11, and the corrugated metal sheets 17, 18 are secured to the extensions 13 by means of the clips 19. In the construction of a sheet metal roof as per custom, lower sheets, such as the lower sheet 17, is first secured in place and then the succeeding sheet 18 is placed upon the upper end of the sheet 17 overlapping it part way as shown in Fig. 1 and so on with the remaining sheets extending upwardly from the sheet 17.

In the assembling of the roofing sheets 17 and 18, the trough portion 20, see Fig. 4, will rest on the upper face of the extensions 13 and the clips 19 securing the sheet 17 to the extension 13 will be disposed partly between the web 13 and the crest portion 21 such as the sheet 17. In actual practice the clips 19 will be mounted upon the web 13 and then the sheets, such as the sheet 17, placed upon the webs 13 and clips 19, and thereupon hardened metal screws 22 forced through the sheet such as the sheet 17. The screws 22, by the workman, will be located to register with one of the openings 6 in the clip 19. With a little practice the workman will quickly be able to locate a screw 22 so that it will register with one of the openings 6. Thereupon the workman will continue to turn the screw until it is driven into its final position with its head 23 closing the opening formed by the shank 24 as shown in Fig. 4. The clips 19 as shown in Fig. 1 will be mounted on the extensions 13 so that the recesses 7 and 8 forming mouths will receive the extensions 13. The diverging character of the recesses 7 and 8 are provided to allow for variations in the thicknesses of the extensions 13. As an instance, as shown in Fig. 3 in dash and dot lines, if the purlin has a long upper extension as an instance, the extension 43 of the purlin shown in dash and dot lines, when the extensions may have a different thickness than the thicknesses of the extension 13 of the purlin shown in full lines, then the clip 19 may assume the position defined by the dash and dot lines 25 in Fig. 3, it here being assumed that the end of the extension 43 terminates at the opening 26 and the inner end of the clip recess then terminates at the opening 27.

These clips 19 can of course also be used to advantage when connecting a vertically extending partition such as a sheet metal partition 28 shown in Fig. 2 to a girt or channel 29 in which case the extensions 30 and 31 of the girt will extend upwardly as per custom and as shown and the clip 32 will be secured to the extension 30

and the partition 28 again secured to the clip 32 by a hardened metal screw 33. While the strength and thickness of material and type of screws and purlins may vary without departing from the general spirit of the invention, in order to facilitate the understanding of the present invention it may be of value to note that excellent results have been achieved when the corrugated metal sheets such as sheets 17, 18 and 28 are composed of galvanized steel of approximately 24 gauge, that is about .025 inch in thickness, the clips composed of galvanized hot rolled steel of about 14 gauge or 0.781 inch in thickness and the screws composed of hard metal about a half inch in length and of the type extensively sold as #10 hardened metal screws.

In actual practice, as shown in Fig. 4, the corrugated sheet 17 rests practically on the upper ends of the legs 1 and 2 with the web 3 spaced from the sheet 17. This spacing is intended so that the screw 22 may effectively engage the edges of the sheet 17 around the opening formed therein to receive the screw 22 and also in order to effectively engage the edges of the metal surrounding the opening 6 of the clip 19 which is engaged by the screw 22. By means of this spacing as an instance, the burr 34, see Fig. 4, cannot be drawn into an opening 6 formed in the clip 19 and thereby interfere with the screw 22 effectively engaging the clip 19. Furthermore, should the opening forced in the sheet 17 not accurately register with an opening 6 in the clip 19 due to this spacing, little, if any, difficulty will be encountered in causing the screw 22 to find an opening 6 in the clip 19, whereas if the web 3 were disposed directly in contact with the sheet 17 the selection of an opening 6 would be definitely more difficult.

Still furthermore, since it is desirable that the sheet 17 intimately engage the upper edges of the clip 19, this spacing will allow drawing the sheet 17 into engagement with the upper edges of the clip 19 and the screw 22 may be turned to raise the web 3 toward the sheet 17 and in turn the sheet 17 down toward the clip 19 thereby to cause the upper edges of the clip 19 effectively to engage the inner face of the sheet 17.

Preferably as shown the screw 22 tapers slightly to a point.

Preferably with the dimensions aforesaid, also it may be noted that excellent results have been achieved when the clip is substantially 1½ inches long, the legs about 1 inch in height and the trough or distance between the upper face of the web 3 and the upper edges of the legs 1 and 2 about ⅜ of an inch.

It is obvious that various changes and modifications may be made to the details of construction without departing from the general spirit of the invention as set forth in the appended claims.

I claim:

1. A device for connecting a corrugated partition to a channel having two tapering webs, said device including a clip having two parallel legs, said legs being vertical to the channel and having diverging recesses to receive one of the tapering webs of said channel, a trough-like web connecting said legs and spaced from a crest of said corrugated partition while the adjacent ends of the legs engage the partition, there being a row of screw receiving openings in said web and a screw piercing the crest of said sheet and entering one of the openings in said web to cut threads in the edge of the web surrounding such opening to connect said sheet to said clip.

2. A device for connecting a corrugated galvanized steel roofing sheet to a purlin having tapering extensions with the troughs of the sheet engaging one of said extensions, said device consisting of a galvanized steel sheet clip including two parallel legs having diverging recesses to receive one of the extensions of said purlin with the legs vertical to the purlin, the upper edges of said legs engaging the inner face of said corrugated sheet at one of its crests, a trough-like web connecting the two legs of said clip but spaced from the crest of said corrugated sheet while the adjacent ends of the legs engage the sheet, there being a plurality of screw receiving openings in said web, and a hardened metal screw piercing said corrugated sheet at one of its crests and engaging the edge of one of the openings in said web to cut threads therein to connect said web to said sheet.

3. The combination of a channel having legs tapering in cross section, a corrugated metal sheet, a clip interposed between said channel and sheet with the troughs of the corrugated sheet engaging the channel and the clip engaging the inner face of the sheet at one of its crests, said clip having two parallel legs secured to one of the legs of said channel, an intermediate trough-like web connecting said legs and spaced from said sheet while the adjacent ends of the legs engage the sheet, and a screw extending from a crest of said sheet into said web.

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