Dec. 2, 1958 H. A. McCHESNEY 2,862,585

BUILDING PANEL STRUCTURE AND CLIP THEREFOR

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FIG_1

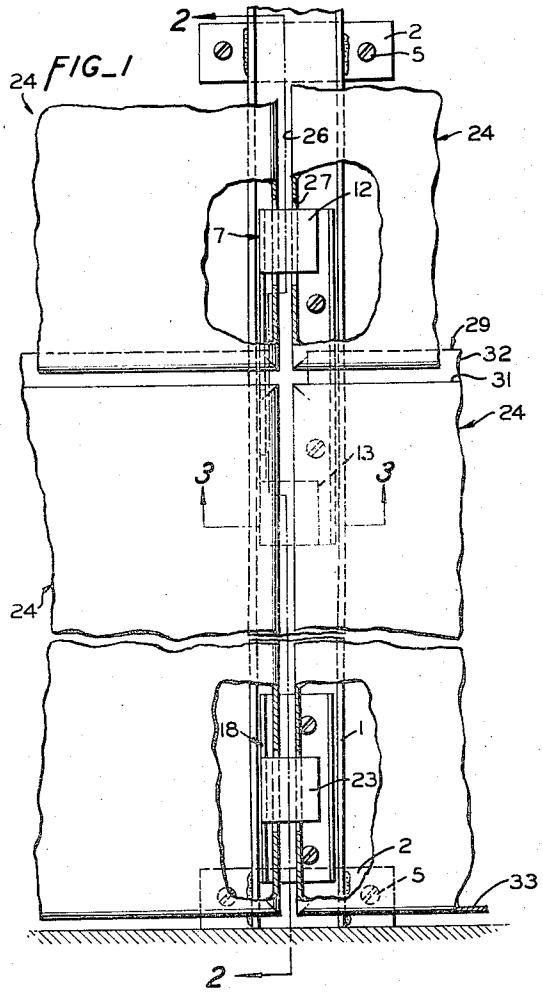


FIG_2

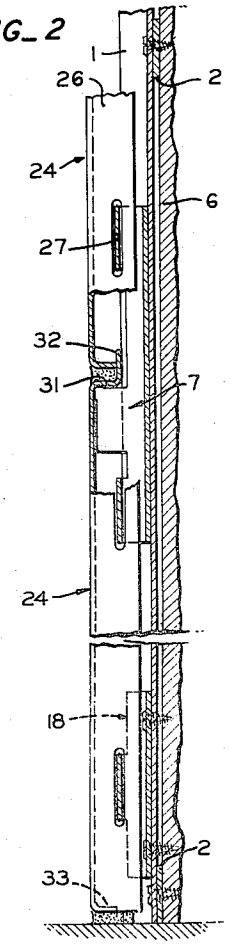
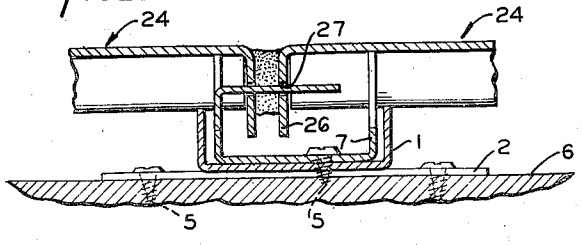


FIG_3



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FIG_4

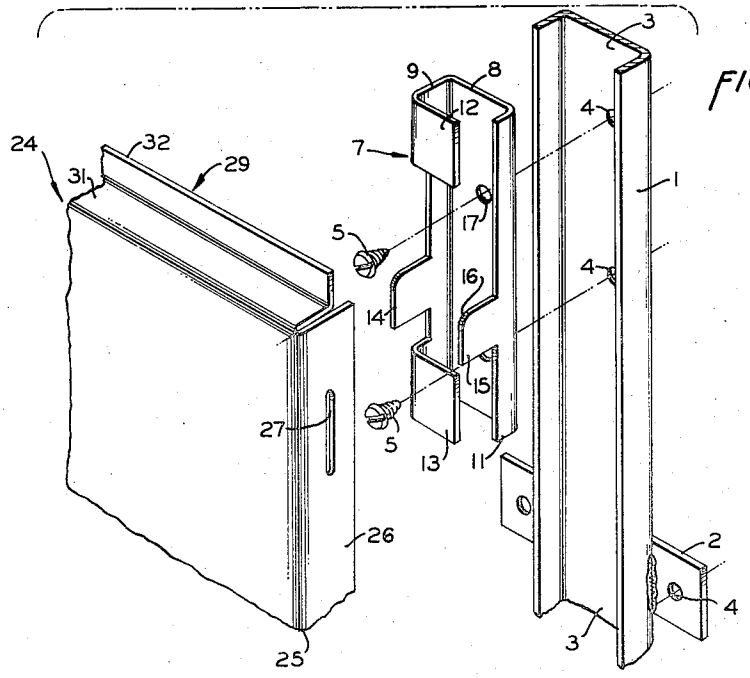


FIG_6

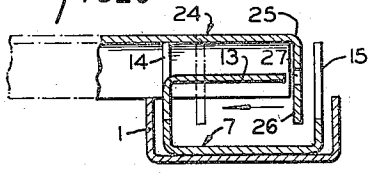
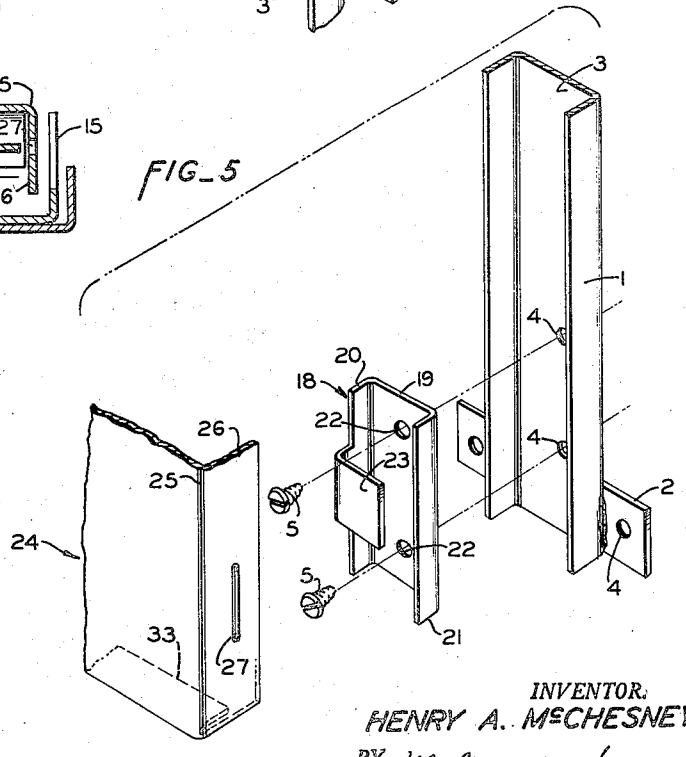


FIG_5



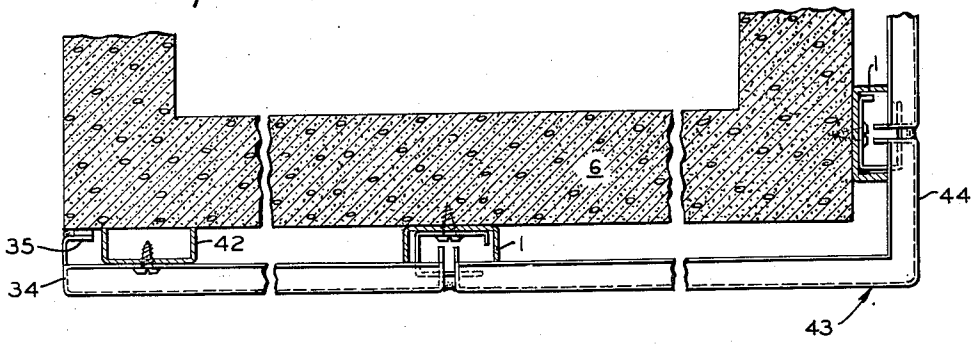
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FIG_7



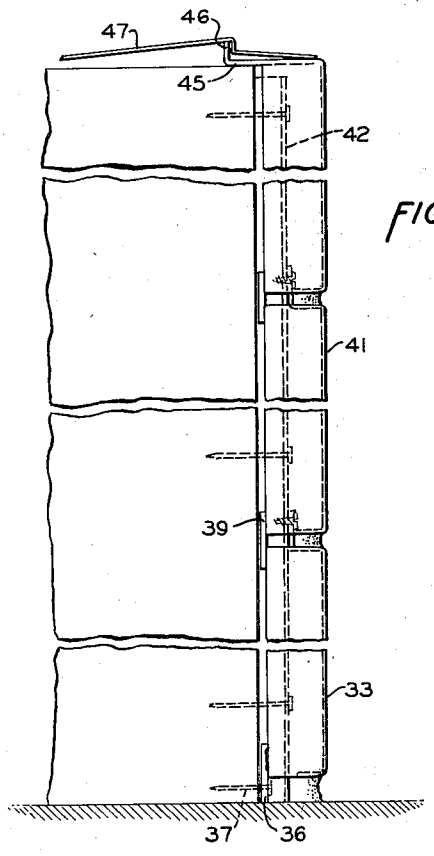


FIG_8

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BUILDING PANEL STRUCTURE AND CLIP THEREFOR

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Application September 26, 1955, Serial No. 536,340

1 Claim. (Cl. 189—88)

This invention relates to metal panels for facing buildings and in general has for its object the provision of a structure for attaching such panels to the frame of a building, including drainage channels arranged to be secured to said frame, and clips for making a connection between the channels and the metal facing panels.

Although it is an old expedient to face the walls of a building with sheet metal panels, enameled or otherwise coated, considerable difficulty has been experienced in maintaining a water-tight seal between the edges of contiguous panels. Currently, the cracks between such edges are filled with a caulking compound, and although a seal so made is temporarily satisfactory, in time the compound dries and cracks and admits water to the interior of the paneling. At such time it is necessary, at considerable expense, to strip the old caulking away and reseal the entire structure.

More specifically, one of the objects of this invention includes the provision of a vertical drainage channel behind each set of the contiguous vertical edges of a plurality of metal facing panels and serving to support the panels from a building frame and to which such panels can be secured by the use of specially designed clips. If then any water finds its way through the caulking, it is conducted by the channels to the base of the structure without doing damage to the building.

A further object of the invention is the provision of special clips by which it is possible to assemble the panel structure from the exterior thereof after the erection of the building walls has been completed.

The invention possesses other advantageous features, some of which, with the foregoing, will be set forth at length in the following description where those forms of the invention which have been selected for illustration in the drawings accompanying and forming a part of the present specification, are outlined in full. In said drawings, one form of the invention is shown, but it is to be understood that it is not limited to such form, since the invention as set forth in the claim may be embodied in other forms.

Referring to the drawings:

Fig. 1 is a front elevation of a panel installation embodying the objects of my invention and portions of which have been broken away to better illustrate its construction.

Fig. 2 is a transverse vertical section taken on the section line 2—2 of Fig. 1.

Fig. 3 is a horizontal section taken on the section line 3—3 of Fig. 1.

Fig. 4 is an exploded isometric view of the top portion of the channel, clip and panel assembly illustrated in Fig. 1.

Fig. 5 is a view similar to that of Fig. 4 but showing the lower portion of the channel clip and panel assembly, the form of this clip differing from the form of clip shown in Fig. 4.

Fig. 6 is a view similar to that shown in Fig. 3 but illustrating the various parts in an intermediate stage of assembly.

Fig. 7 is a horizontal section taken through an installation embodying the objects of my invention and particularly disclosing typical end and corner panel structures.

Fig. 8 is a left-hand end elevation of the installation illustrated in Fig. 7.

The structure illustrated in these various figures comprises a plurality of vertically disposed, laterally spaced metal drainage channels 1, provided along their backs with transverse bars 2. Formed in the webs 3 of the channel and their bars 2 are holes 4 for the reception of screws 5 for attaching the channels to the wall 6.

Here it should be observed that the channels 1 are placed on center lines spaced a distance equal to the width of the panels being used and that, as shown in Fig. 7, end panels are connected at their lower ends to the walls by depending lugs and are spaced from the wall by reversed channels, the details of which will be later described.

Nested within the channels 1 are interior clip channels 7, each including a web 8, and outwardly extending flanges 9 and 11. Formed on each end of the flange 9 are transversely bent end tongues 12 and 13 overhanging the web 8 in parallelism therewith and having a transverse length somewhat less than the width of the web 8. Extending outwardly from the intermediate portions of the flanges 9 and 11 and formed coplanar therewith are identical intermediate stop lugs 14 and 15, preferably formed with rounded upper corners 16. Provided in the web 8 of each of clips 7 are holes 17 for the reception of screws 5, these holes being formed on the same modules as are the holes 4 of the channel 1. The interior clip channels 7 are used only for interlocking the four corners of four contiguous panels such as shown in Fig. 1.

To interlock only two contiguous panel corners such as might occur only at the top or bottom edges of the panel facing, resort is had to end clips 18 nested within the channels 1, and each including a web 19 and outwardly extending flanges 20 and 21.

Formed in the web 19 are screw holes 22 for the reception of the screws 5, and extending from the central part of the flange 20 is a tongue 23 transversely bent so as to overhang the web 19 but having a transverse length substantially less than the width of the web 19.

Facing the supporting and locking structure above described are a plurality of rectangular, contiguous and coplanar sheet metal panels 24, each provided along its vertical edges 25 with an inwardly extending vertical flange 26. Formed adjacent the upper and lower ends of each flange 26 are vertical slots 27 arranged to receive the tongues 12 or 13 of one of the interior clips 7 or the tongue 23 of one of the end clips 18, the lengths of each of the slots 27 being somewhat greater than the width of the tongues 12, 13, and 23. Here it should be noted that the length of each lug 14 should be such that when the tongues 12, 13, and 24 are engaged in the slots 27, the outer ends of the lugs engage the inner faces of their associated panels 24. It will therefore be seen that the lugs 14 serve as stops for the panels and gauge their distance from the building wall.

Formed integral with the upper horizontal edge of each of the panels 24 is an angle 29 including an inwardly extending horizontal flange 31 and an upwardly extending vertical flange 32. Extending inwardly from the lower horizontal edge of each of the panels 24 is a horizontal flange 33, this flange and the flange 31 being of equal widths and of a width substantially less than the width of the panel flanges 26. By resorting to this construction, the lower end of any upper panel can be made to overlap the flange 32 of a lower panel in shingled fashion. This of course means that in assembling the panels 24 after the supporting channels and clips above described have been properly positioned and secured to

a wall to be faced with such panels, the lowermost row of panels must first be attached to the clips. Furthermore, attachment of the panels of each row of panels must proceed successively from the left-hand end of the wall to the right-hand end thereof, if as shown in Figs. 4 and 5, the tongues 12, 13, and 23 of the clips 7 and 18 extend from left to right. The first step in this process is illustrated in Fig. 6 wherein a left-hand end panel 24 is shown in full line with its right-hand end flange 25 disposed within the confines of one of the clips 7 with its slot 27 in alignment with the tongue 13 of the clip 7. By bodily translating the panel to the left, the tongue 13 will be engaged within the slot 27 as shown in dash line. This having been done, a right-hand end panel can be similarly interlocked in the clip, and both panels so locked on the tongue 13 can be shifted to the left or right a total distance substantially equal to the length of the tongue. If, on the other hand, the tongues of the clips extend toward the left, then the assembly of each row of panels proceeds progressively from right to left. It is, of course, to be understood that the upper and lower slots of each panel are simultaneously passed over their associated clip tongues so that the vertical edges of the panel will be in parallelism with the supporting and drainage channels 1.

If the left panel is a terminal or end panel such as the panel 33 shown in Figs. 7 and 8, its end flange 34 is provided with a return bend 35. Welded to the lower corner of the bend 35 is a strap 36 arranged to receive a nail or screw 37 attached to the building wall or frame. Similarly secured to the upper corner of the terminal panel is an upwardly extending strap 39 which should be nailed or screwed to the building wall prior to the installation of the end panel 41 of the next succeeding tier or row of panels. As best shown in Fig. 7, the end panels are held positively spaced from the building wall or frame by an inwardly facing, vertically extending channel 42.

The right-hand end or terminal panels of each row or tier of panels are fastened to the building wall in the same manner as above indicated with respect to the left-hand panels, unless it is desired that the panel face turn a building or wall corner in a manner such as shown in the right-hand side of Fig. 7. In such event, a special corner panel 43 is resorted to having a right angle bend 44, but otherwise constructed in the same fashion as any of the intermediate panels.

After the first tier or row of panels has been assembled and interlocked with its associated clips, the panels of the second tier or row of panels are assembled in the same manner, but as above indicated, with their lower ends overlapping the upper ends of the panels of the lower tier of panels.

If, by chance, the paneled facing extends to the upper edge of the building wall as shown in Fig. 8, the upper flange 45 of the uppermost tier of panels should overhang the building wall and be provided with an upwardly extending edge 46. A section of galvanized flashing 47 should then be placed over the entire assembly.

In assembling the panels, it is preferable to leave a groove or channel about ⅛" wide between the contiguous edges of the panels and these grooves should then be filled with a caulking compound in accordance with usual practice.

It will be seen that as a result of the above construction, I have provided means for readily facing the wall of a building with sheet metal panels wherein the contiguous edges of each pair of panels are readily and removably clipped to vertical drainage channels attached to the wall and which serve to lead any water that might pass between the vertical edges of contiguous panels, to the base of the wall, and thus avoid damage thereto.

I claim:

A building panel structure comprising: a vertical and outwardly facing channel section attached to a building wall; an outwardly facing clip channel nested within and secured to said channel section, said clip channel including a central web and outwardly extending flanges; upper and lower end tongues formed integral respectively with the ends of one of said flanges and overhanging said web in substantial parallelism therewith; a lug formed integral with each of said flanges intermediate the ends thereof and coplanar therewith; and a pair of contiguous, coplanar, rectangular, sheet metal panels mounted over said clip channel in substantial parallelism with its said web and with the contiguous edges of said panels in vertical alignment with said clip channel, said panels being provided along their top edges with inwardly extending horizontal flanges and along their contiguous vertical edges with inwardly extending vertical flanges formed adjacent their upper ends with vertical slots, said vertical panel flanges being accommodated within said clip channel, the said lower end tab of said clip channel being hooked through the slots of both of said vertical panel flanges and the outer ends of said intermediate lugs being in abutment with the inner faces of said sheets.

References Cited in the file of this patent

UNITED STATES PATENTS

379,688	Dennis	Mar. 22, 1888
1,455,712	Collins	May 15, 1923
1,936,238	King et al.	Nov. 21, 1933
2,251,991	Fellner	Aug. 12, 1941