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BUILDING PANEL WITH RIBBED SEALING ELEMENT BETWEEN OVERLAPPING EDGES

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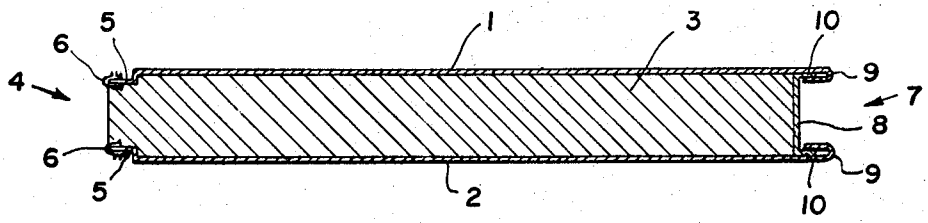


Fig. 1.

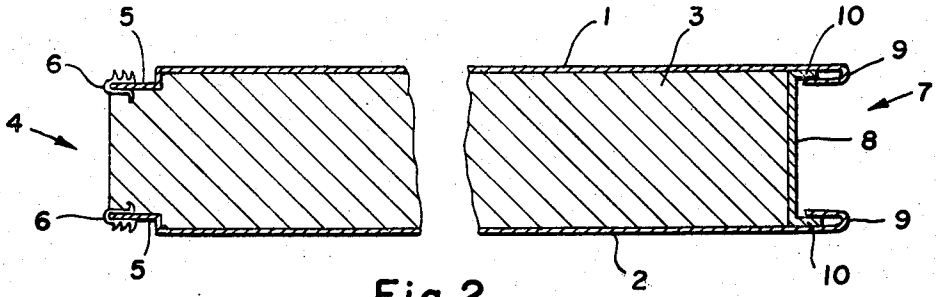


Fig. 2.

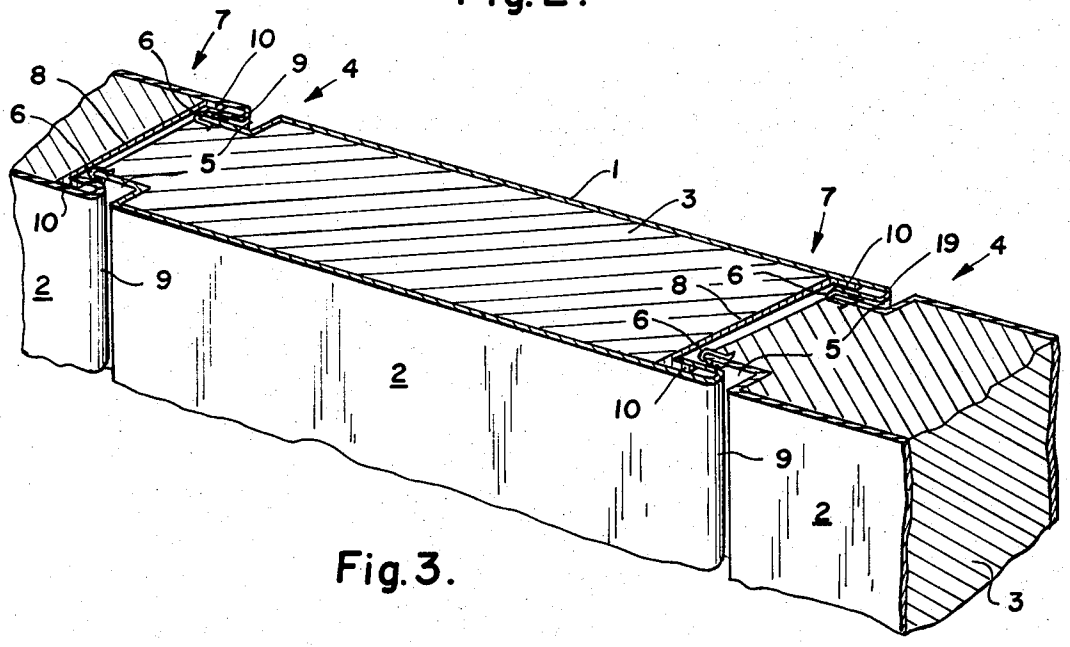


Fig. 3.

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BUILDING PANEL WITH RIBBED SEALING ELEMENT BETWEEN OVERLAPPING EDGES

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This invention relates to a panel construction suitable for sidewalls and the like for buildings, and, more particularly, it relates to a novel panel edge seal construction.

In the use of conventional panels for erecting industrial buildings and the like, difficulty has been experienced in obtaining a satisfactory seal between the panels in view of the joints generally used for connecting the panels in edge-to-edge relationship.

An object of my invention is to provide a building panel construction wherein a novel edge seal is embodied therein to overcome the abovementioned disadvantage, and so that the mere jointure of male and female corresponding side edges of adjoining panels will provide a very effective seal.

Other objects and advantages will become more apparent from a study of the following description taken with the accompanying drawing wherein:

FIG. 1 is a cross-sectional view of a foamed-in-place building panel embodying sealing edges in accordance with the present invention;

FIG. 2 is an enlarged, fragmentary, cross-sectional view showing the two sealing edges of FIG. 1 in more detail; and,

FIG. 3 is a fragmentary, perspective view with a portion in horizontal cross-section, showing a plurality of building panels, as shown in FIGS. 1 and 2, secured together in edge-to-edge relationship with seals embodying the present invention.

Referring more particularly to FIGS. 1 and 2 which show the overall panel design, number **1** denotes an interior metal sheet and numeral **2** denotes an exterior metal sheet, between which is formed a core **3** of rigid urethane foam or cellular insulation which is, preferably foamed-in-place material, rigid and unyielding. Sheets or skins **1** and **2** are of thin gauge metal, such as aluminum, steel, aluminized steel, galvanized steel, or the like. The interior sheet **1** may be of thin foil. The skin sheets may be smooth or embossed, with the exposed faces or unpainted. The inner surfaces of the skins or sheets **1** and **2**, exposed to the urethane foam, are preferably painted with a corrosion resistant primer.

The male edge **4** of the panel is formed of offset jogs **5** on the inner and outer skins forming panel edge portions of reduced thickness. A flexible edge gasket or weather seal **6** is formed on the edges of the skins **1** and **2** and may be of any suitable sealing material, such as rubber, plastic, vinyl material and the like, with serrated or ribbed outer surfaces, as shown somewhat exaggerated in size. The foam **3** envelops the inner surface of the weather seal **6** as the foam fills the void between sheet portions **5**.

The female edge of the panel, shown at the right of FIGS. 1 and 2, is formed by bending the edge portion of sheets **1** and **2**, 180° to form a rounded edge **9** which engages the flanges **10** of a rigid edge channel **8**, to form

a pocket or female edge portion **7** for receiving the male edge **4**.

Channel **8** may be made of rigid polyvinylchloride or other rigid plastic or substance that will not conduct heat or cold, yet is structurally substantial. It must resist the outward pushing action of the expanding chemical core material as it reacts and changes from a liquid to expanded foam. It must at the same time be strong enough to hold the inner and outer sheets together during shipping and handling.

FIG. 3 shows an assembly of several panels joined in edge-to-edge sealing relationship and formed of panels of the construction shown in FIGS. 1 and 2. As will be noted in FIG. 3, the panels are easily assembled by merely inserting a male member into a female member.

The entire assembly, as shown in FIG. 3, is attached to the girt framing of a building and the fastening may be made on successive panels as they are assembled. Therefore, the assembly shown in FIG. 3 may be easily and quickly done with relatively inexperienced labor and at relatively low cost.

The side joints provide seals which resist air and water penetration and allow for expansion and contraction of the panels as well as for variations in alignment of the structural support and for tolerances in the fabrication of the panel itself. It will be further noted that the weather seal **6** extends along the entire length of the panel sheets **1** and **2**.

Thus it will be seen that I have provided an efficient edge seal construction for foamed-in-place panels for assuring a weather-tight and moisture proof seal for resisting penetration of air and water through the joints, without the necessity of applying sealing material after the building panels are assembled; furthermore, I have provided a shouldered panel edge having a permanently attached seal which is held in place very firmly by the foam formed between the front and rear panels, so as to provide a unitary panel construction that is easy to erect and assemble, and which will allow for expansion and contraction of the panels as well as for variations an alignment and for tolerances in fabrication of the panel.

While I have illustrated and described a single specific embodiment of my invention, it will be understood that this is by way of illustration only, and that various changes and modifications may be made within the contemplation of my invention and within the scope of he following claims.

I claim:

1. A rigid building panel comprising spaced, parallel front and rear sheets having molded therebetween an insulating, foamed rigid core material, one side edge of said sheets being bent and offset inwardly and engaging an edge portion of said material so as to form a panel edge portion of reduced thickness, a sealing element in the form of a plurality of flexible ribs surrounding each of the edges of said offset portion of said insulating material, the other side of said panel being formed by a channel having outwardly extending flanges engaging the inner surfaces of said sheets and being engaged by 180° bent end portions of said sheets to form a female member into which a male member of an adjoining panel may project to form a seal for resisting air and water penetration, which will allow for expansion and contraction of

the sheets from temperature changes, and which will allow for variations in alignment.

2. A building panel as recited in claim 1 wherein said channel is formed of rigid plastic material and wherein said core is of urethane.

References Cited

UNITED STATES PATENTS

2,589,633	3/1952	Shepheard	52—619
2,682,938	7/1954	MacDonald	52—619
2,808,624	10/1957	Sullivan	52—403
2,858,580	11/1958	Thompson et al.	52—309
3,331,178	7/1967	Elsner	52—309

FOREIGN PATENTS

1,165,670	6/1958	France.

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