

Nov. 17, 1964

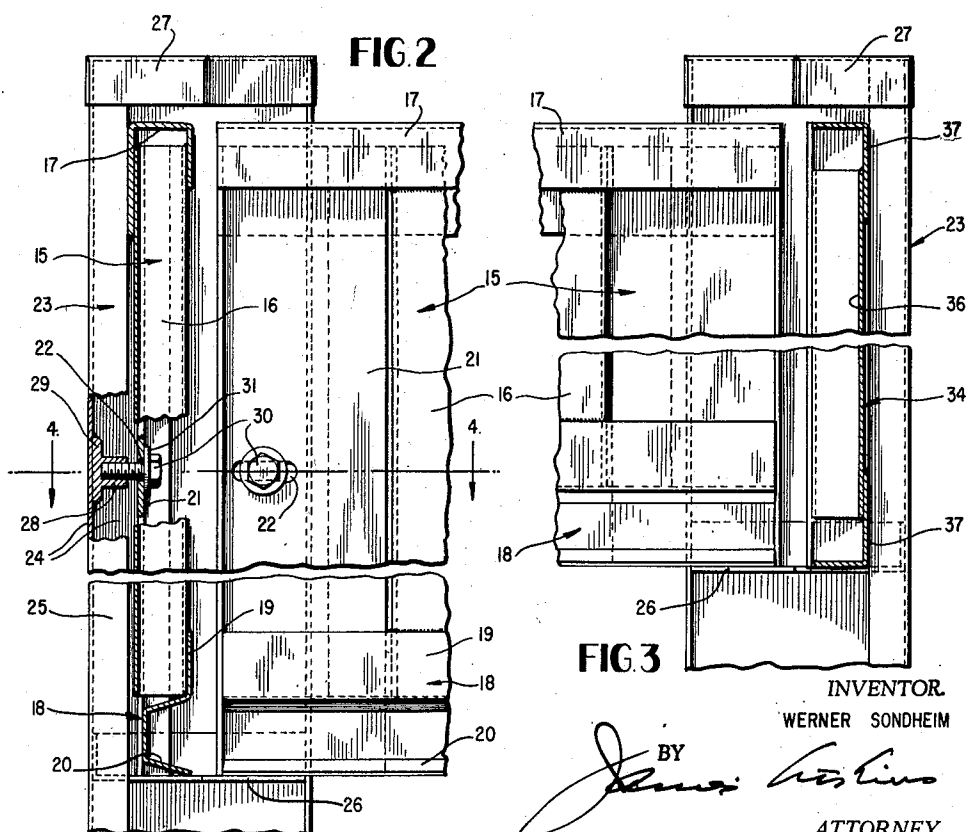
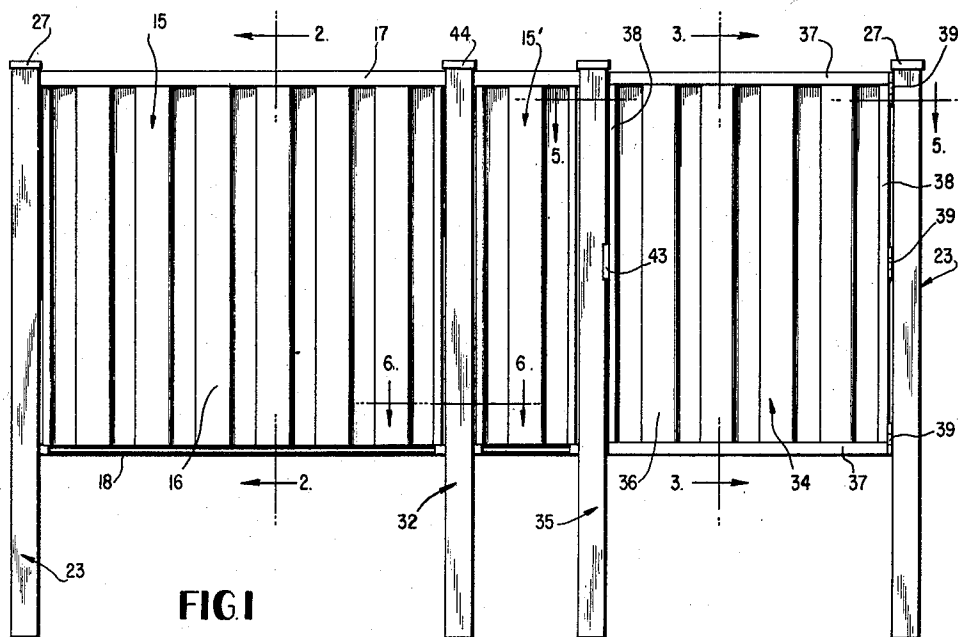
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SHEET METAL ENCLOSURES

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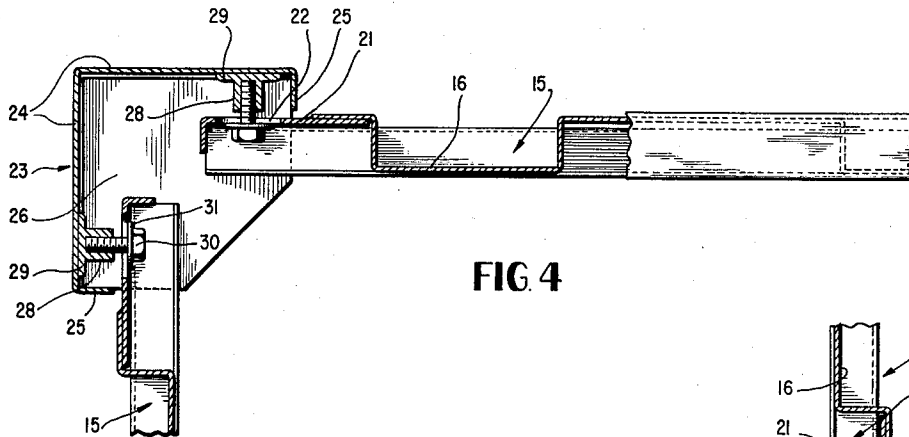


FIG 4

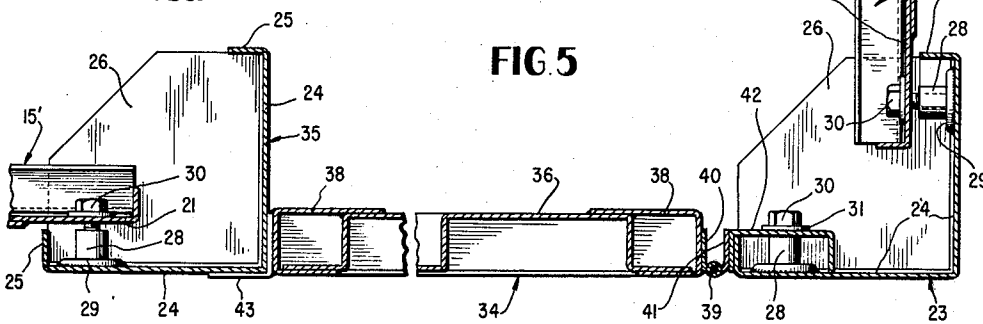


FIG 5

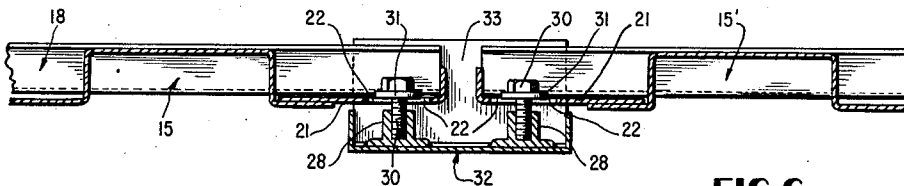


FIG 6

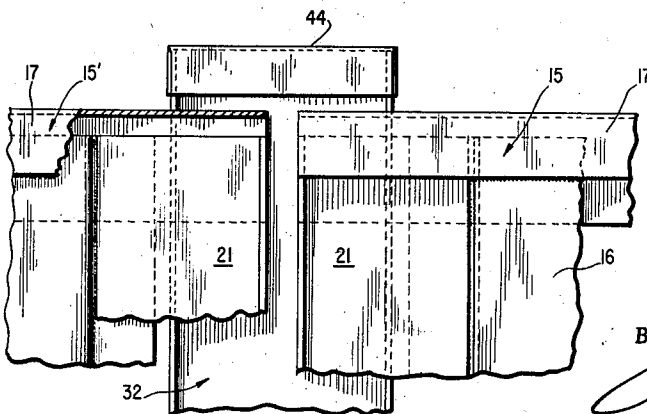


FIG 7

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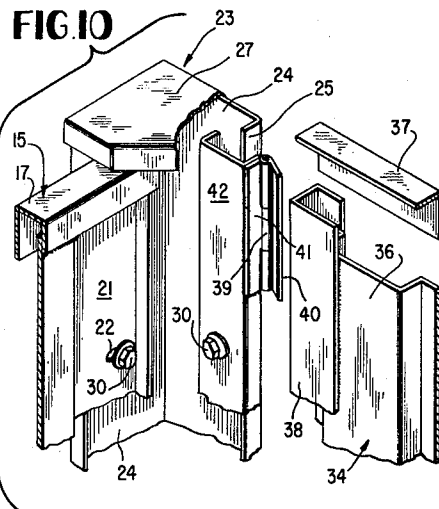
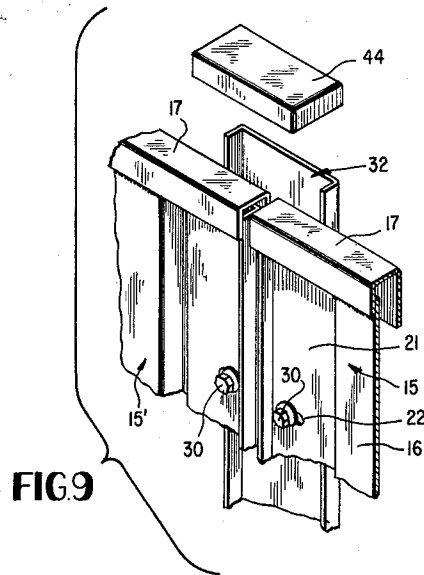
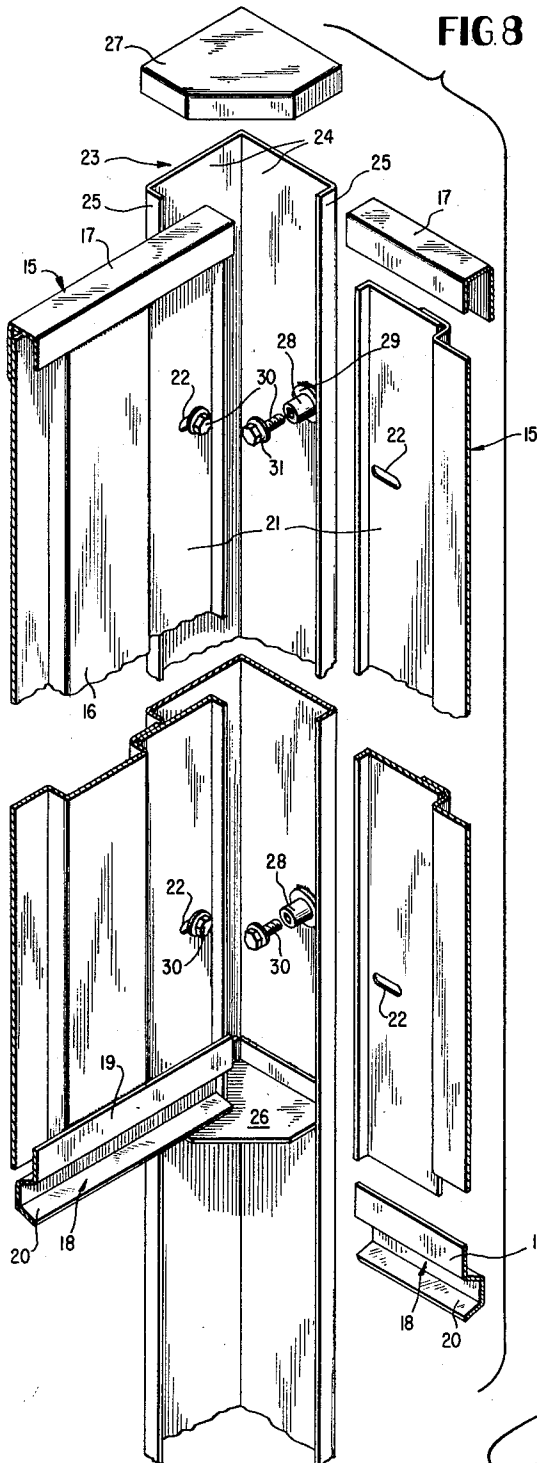
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3 Sheets-Sheet 3



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SHEET METAL ENCLOSURES

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4 Claims. (Cl. 189-34)

This invention relates to sheet metal enclosures embodying prefabricated panel sections and supporting posts.

The prime object of the invention is to provide an extremely sturdy and economical enclosure structure which is very easy to erect or install without the need for skilled labor and which is capable of providing a wide variety of configurations of fence-like enclosures having access openings at the desired location or locations, with or without swinging gates at the access openings.

The invention is characterized by prefabricated corrugated framed panels and coacting end, corner or intermediate supporting posts having novel and simplified panel attaching means which are very easy to manipulate and adjust and which provide a very strong connection between the various posts and panels of the enclosure.

Other important objects and advantages of the invention will be readily apparent to those skilled in the art during the course of the following detailed description.

In the accompanying drawings forming a part of this application and in which like numerals are employed to designate like parts throughout the same,

FIGURE 1 is a side elevation of a sheet metal enclosure in accordance with one illustrative embodiment of the invention,

FIGURE 2 is an enlarged fragmentary vertical section partly broken away taken on line 2-2 of FIGURE 1,

FIGURE 3 is a similar section taken on line 3-3 of FIGURE 1,

FIGURE 4 is a fragmentary horizontal section taken on line 4-4 of FIGURE 2,

FIGURE 5 is an enlarged fragmentary horizontal section taken approximately on line 5-5 of FIGURE 1,

FIGURE 6 is a similar section taken on line 6-6 of FIGURE 1,

FIGURE 7 is a fragmentary inner side elevation of the structure shown in FIGURE 6,

FIGURE 8 is an exploded perspective view partly in section and parts broken away of a corner post and associated panels and elements,

FIGURE 9 is a similar view of an intermediate post and associated elements, and

FIGURE 10 is a similar view of a corner gate post and associated elements.

In the drawings, there is illustrated a single typical embodiment of the invention and it should be understood that the enclosure in its entirety can take on many different sizes and shapes according to the invention.

In the drawings, the numerals 15 and 15' designate prefabricated corrugated framed sheet metal panels which are structurally identical except in length. The panel 15' is a short fill-in panel and the panel 15 is a panel of standard or intermediate length. Within the scope of the invention, these panels may be provided in varying lengths to meet the needs of particular installations. For simplicity of illustration and description, all of the enclosure panels 15 shown in the drawings may be considered identical with the exception of the fill-in panel 15' and the numeral 15 is utilized to designate the various panels throughout the drawings.

Each typical prefabricated panel 15 embodies a corrugated sheet metal body portion 16 with the rectangular corrugations thereof extending vertically in the assembled enclosure. A channel-shaped top rail 17 is secured by welding to the top of each corrugated body portion 16,

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as shown. Each panel 15 further comprises a bottom rail 18 including a top vertical flange 19 rigidly secured by welding to the inner face of the corrugated body portion, and a depending inwardly opening channel extension 20 having divergent sides to readily shed water. The vertical ends of each panel 15 carry L-shaped end rails 21, welded to the adjacent ends of the corrugated body portion 16 and these end rails are provided near the top and bottom of the panel and at each end thereof with horizontally elongated slots 22 constituting an important feature of the invention in that they allow for ready adjustment of the parts at assembly to compensate for slight variations in post spacing and dimensional tolerances on the prefabricated panels. The top and bottom rails 17 and 18 and the end rails 21 completely frame the corrugated panels 15 and render them rigid as well as neat and attractive in appearance, particularly as viewed from the exterior of the enclosure.

The invention includes the provision of corner posts 23 which may also serve as gate posts or end posts in the enclosure structure. Each corner post 23 is generally L-shaped in horizontal cross section including perpendicular side walls 24 which are joined to provide a neat corner on the exterior of the post and enclosure. Relatively narrow inwardly directed flanges 25 are formed integral with the walls 24 and extend for the full height or length of the post. Each post 23 is formed in the desired length for anchorage into the ground or in concrete, and a horizontal support plate or web 26 for adjacent end portions of panels 15 is welded to the walls 24 and flanges 25 a suitable distance below the top of the post. Each post 23 has a top finishing cap 27 which may be frictionally mounted thereon or welded thereto, if preferred.

As shown in the drawings, each post 23 is provided upon the inner faces of the walls 24 with inwardly projecting blind nuts 28 having flanges 29, secured rigidly by welding to the walls 24. The nuts 28 of each post are spaced uniformly from the top of the post and from the support plate 26 and from the flanges 25 so as to be in proper alignment with the slots 22 of the panels during assembly. Bolts 30 carrying flat washers 31 are utilized to detachably rigidly secure the ends of adjacent panels 15 to the posts 23, FIGURE 4, with the lower ends of the panels resting upon the plate 26 and partially supported thereby. The washers 31 and the heads of the bolts 30 bear against the inner faces of the rails 21 and the bolts and the blind nuts 28 are fully concealed from the exterior of the enclosure or corner post. The slots 22 allow suitable adjustability of the parts during assembling and the lower channel extensions 20 being somewhat resilient allow some limited vertical adjustment for the panels relative to the posts. As shown clearly in FIGURE 2, the channel extensions 20 bear directly upon the support plate 26 or web.

A modified type of intermediate post 32, also capable of serving as an end post, if desired, is adapted to join and support two adjacent panels along one side of the enclosure as, for example, the longitudinally aligned long and short panels 15 and 15', FIGURES 1 and 6. Each intermediate post 32 is channel-shaped and relatively shallow in horizontal cross section and has its open side facing inwardly to form a neat appearance on the exterior of the enclosure. A horizontal support plate or web 33 is welded to the post 32 at the proper elevation to support the adjacent ends of the panels 15 and 15'. The plate 33 is at the same elevation as the plate 26, for a given enclosure, and serves the same purpose in the assembly. Upper and lower pairs of the blind nuts 28 previously described are welded to the inner face of each post 32 in proper vertically and horizontally spaced relation to be aligned in assembly with the slots 22 of the adjacent

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prefabricated panels. The bolts 30 and flat washers 31 previously described are utilized in the same manner for rigidly interconnecting the panels 15 and 15' with the post 32, and the fastener elements are fully concealed from the exterior of the enclosure as in the case of the corner construction previously described.

If preferred, in lieu of the channel-shaped intermediate post 32, FIGURE 6, a pair of substantially L-shaped bars welded together back-to-back may be utilized for the intermediate posts and if so, the nuts 28 are welded to the composite post in the same spaced relation but on opposite sides of an intermediate vertical reinforcing flange afforded by the two back-to-back L-shaped bars, not shown. The only significant difference in this alternative type of intermediate post is that the mentioned vertical reinforcing flange for increased stiffness is disposed between the ends of the panels 15 and 15', FIGURE 6. The channel-shaped post 32 illustrated in the drawings is adequately rigid without the intermediate vertical web and the construction shown in somewhat more economical.

The numeral 34 designates generally a horizontally swinging gate for the enclosure and such gate is composed of a prefabricated panel to a great extent identical to the previously-described enclosure panels 15 but having some distinguishing characteristics. The gate 34 may be installed at any preferred location in the enclosure and in the embodiment shown is located next to the fill-in panel 15' and between one corner post 23, FIGURE 1, and an intervening gate post 35 which is identical in construction to one of the corner posts 23. As shown in FIGURE 5, the gate post 35 is connected with and supports the adjacent end of fill-in panel 15' in the manner already described in detail. The corner post 23 shown in FIGURE 5 is likewise connected with and supports one of the enclosure panels 15 in the manner already described and this particular panel 15 extends at right angles to the gate 34.

The gate 34 has a corrugated sheet metal body portion 36 of desired proportions and substantially identical to the previously-described panel body portion 16. Top and bottom L-shaped finishing rails 37 are welded to the panel body portion 36 and vertical channel-shaped end rails 38 also welded to the body portion 36 complete the finishing frame around the margins of the rectangular gate.

Gate hinges 39 have corresponding leaves 40 thereof welded to the adjacent end rails 38, FIGURE 5, and the other corresponding leaves 41 of the several vertically spaced hinges are welded to a vertical channel-shaped hinge adapter rail 42, disposed upon the interior of the adjacent corner post 23, FIGURE 5, and rigidly secured thereto by the previously described nut and bolt means 28, 30 and 31. The lower end of adapter rail 42 may rest upon the horizontal web 26 of the post 23 for stability. The free end of the swinging gate carries an L-shaped stop 43, welded thereto, and adapted to abut the front face of gate post 35 when the gate is closed. Suitable gate locking means, not shown, may be adopted if preferred and such means form no part of the present invention.

It should now be apparent that a very sturdy, neat and attractive and highly economical sheet metal enclosure according to the invention may be erected in a minimum time by unskilled labor and without any special tools. The welding of parts constituting the panels and gate is all done during the prefabrication of these components and the only labor required to erect the enclosure of any desired configuration is to locate and set up the prefabricated posts and position the panels and gate or gates upon them and apply the bolts 30 to the welded blind nuts 28, utilizing the slots 22 for slight adjustment. The advantages of the construction and simplified mode of assembly will be apparent to anyone skilled in the art without the necessity for a further detailed description.

Each intermediate post 32 may also have a top finishing cap 44 as shown.

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Where the parts are to be painted during prefabrication of the panels and posts, the bolts 30 are placed within the openings of the nuts 28 prior to painting so as to avoid obstruction of the nut openings and also to eliminate loss of parts and to render the process of assembly more convenient.

A main virtue of the invention is that an absolute minimum of separable parts are employed at the erection site and such parts constitute only the posts and panels and the bolts 30 which interconnect the panels and the posts. This is a distinct improvement over prior art devices of a broadly similar type where numerous small parts and fastener elements are utilized.

It is to be understood that the form of the invention herewith shown and described is to be taken as a preferred example of the same, and that various changes in the shape, size and arrangement of parts may be resorted to, without departing from the spirit of the invention or scope of the subjoined claims.

Having thus described my invention, I claim:

1. In a sheet metal enclosure structure, a plurality of prefabricated framed corrugated sheet metal panels having horizontally extending slots therein near opposite ends thereof and near the tops and bottoms of the panels, supporting sheet metal posts for said panels adapted to be anchored in the ground and being prefabricated and including nuts welded thereto for registry with said panel slots and horizontal support webs for the bottoms of said panels below said nuts, whereby the panels when resting upon said webs may have said slots substantially registering with said nuts, and screw-threaded fastener elements engageable through said slots and within said nuts to connect the panels with the posts.

2. The invention as defined by claim 1, and wherein said panels and posts have overlapping spaced opposed portions adjacent said slots and welded nuts, said nuts disposed in assembly between the overlapping portions and being substantially concealed therebetween, said nuts having blind openings facing said slots, said screw-threaded fastener elements being applied through said slots into said blind openings from the sides of the panels remote from the opposing faces of the posts.

3. In a sheet metal enclosure structure, a supporting corner post which is generally L-shaped in horizontal cross section, a pair of panels to be mounted upon the corner post detachably, said panels extending substantially at right angles to each other when assembled with the side walls of said post, the post side walls and said panels having overlapping spaced opposed vertical edge portions when assembled together, said overlapping portions of the panels having vertically spaced horizontally elongated slots formed therethrough, a corresponding number of threaded nuts anchored to the opposed edge portions of the post side walls between the side walls and panels and spaced apart vertically so as to be alignable with the slots, and screw-threaded fasteners engageable through said slots and into said nuts from the sides of the panels which are remote from the nuts.

4. The invention as defined by claim 3, and a horizontal web secured to the side walls of the corner post substantially below said nuts to engage the bottoms of the panels and align their slots with said nuts approximately to facilitate the application of the screw-threaded fasteners into the slots and nuts.

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