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2,797,449

PANELS WITH FACE-ANCHORED METALLIC SHEETS

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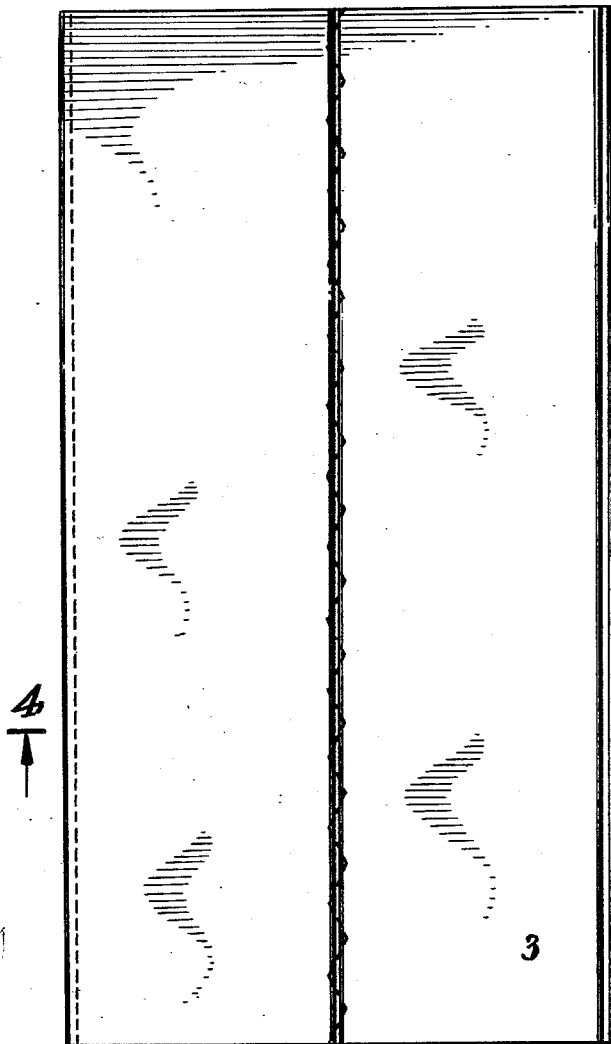


FIG-1-

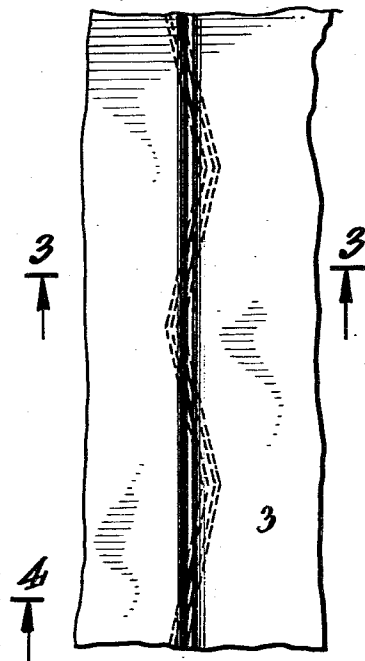


FIG-2-

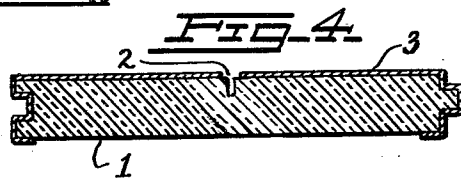
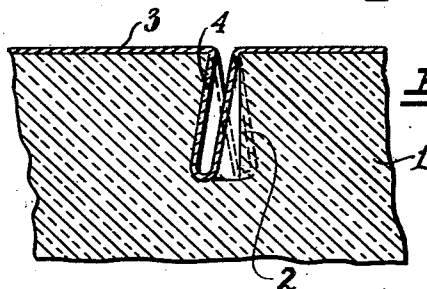


FIG-3-



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PANELS WITH FACE-ANCHORED METALLIC SHEETS

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1 Claim. (Cl. 20—15)

In metal sheet-faced panel structures it is customary to employ a plywood or composition core of suitable strength and to face the core with a metallic sheet or sheets. The core is of low expansion and contraction ratio, whereas the metallic sheet, particularly of aluminum is responsive to changes in temperature and has a very much greater expansion and contraction coefficient than the core.

Thus in many endeavors to bond aluminum sheets to cores of the general kind, and by means of adhesives, expansion of the metallic sheets during warm weather has repeatedly caused them to buckle and disrupt the adhesive bond.

It is the specific object of the present invention to provide panels consisting of core members and facing sheets in which adhesive for bonding the sheets to the core is not essential, although it may be employed, and wherein the sheets are adequately bonded into flat engagement with the core and nevertheless are permitted to expand inwardly without affecting the bond. This inward expansion and contraction enables the facing sheet to be interlocked with the side margins of the panel, and without any buckling of the sheets upon expansion.

This invention will be described with reference to the accompanying drawings in which:

Fig. 1 is a plan view of a panel constructed in accordance with our invention.

Fig. 2 is a fragmentary view of our enlarged section looking down at the top face of the panel section shown.

Fig. 3 is a vertical section on the lines 3—3, Fig. 2, and

Fig. 4 is a broken away vertical section on the lines 4—4, the metallic sheet being broken away at an area immediately above a top channel in the core.

Referring first to Fig. 4 it will be seen that the core 1 which may be composed of a cellulosic composition, or any suitable composition, has formed therein a rectangular channel 2. In the present embodiment this channel extends longitudinally of the core, as indicated in Figs. 1 and 2. A characteristic of the walls of the channel 2 is that they are capable of deformation, the material not being hard and rigid like the metallic sheet 3.

As shown in Figs. 1-3 inclusive the metallic sheet 3, which preferably is of aluminum, has longitudinally and centrally formed therein a channel-like downwardly extending bead 4. This bead, which at any cross-section has the U-shape of Fig. 3, is alternately bent to opposite

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sides so that it is substantially zig-zag. The width of the channel in the core may, for example, be $\frac{1}{8}$ inch and each laterally bent section of the bead may have an offset of $\frac{3}{64}$ inch.

Inasmuch as the normally aluminum sheet 3, particularly to the bead thereof, is springy, the bead may be pressed downward into channel 2. In so doing the offset sections of the bead will be deflected inwardly, and then will spring outwardly as indicated in Fig. 3. It will be understood that in both Figs. 1, 2 and 3 the degree of offset of the bent bead sections is exaggerated for clarity of illustration.

When the bead is pressed into final position as shown in Fig. 3, the springy nature of the bead will press the laterally offset sections into the softer material of the core and the sheet will be locked in position.

In the embodiment shown the sheet, after its application to the core, may be interlocked with the margins of the core, as shown in Fig. 4. Thus at one margin of the core the latter may be grooved and the sheet bent with the formation abutting the wall of the grooves, whereas at the opposite side of the core it may be provided with a rib encompassed by the sheet material.

Referring to Figs. 2 and 3 it will be seen that the passageway or space at the entrance to the interior of the bead permits an expansion movement of the sheet, from both margins thereof, toward the passageway. In practice the passageway will be calculated as that sufficient to meet all ordinary expansion of the sheet. Likewise contraction forces, after expansion, will be compensated.

It will be understood that various modifications may be made in the form or arrangement of the elements constituting the embodiment illustrated in the drawings without departing from the spirit of the invention.

Having described our invention, what we claim and desire to secure by Letters Patent is as follows:

A metallic facing sheet for a panel structure having a compressible core member formed at one face with a channel, said facing sheet being formed from edge to edge thereof with a springy bead normally having a passage-way extending from the outside of the sheet and into the bead, said bead being of generally U-shaped cross-section and being alternately bent in opposite directions into a generally zigzag formation, said sheet being adapted for abutment with said core member at the channel face thereof, and said bead being adapted to be spring-locked into said channel, with the laterally offset zigzag sections pressing into the walls thereof.

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