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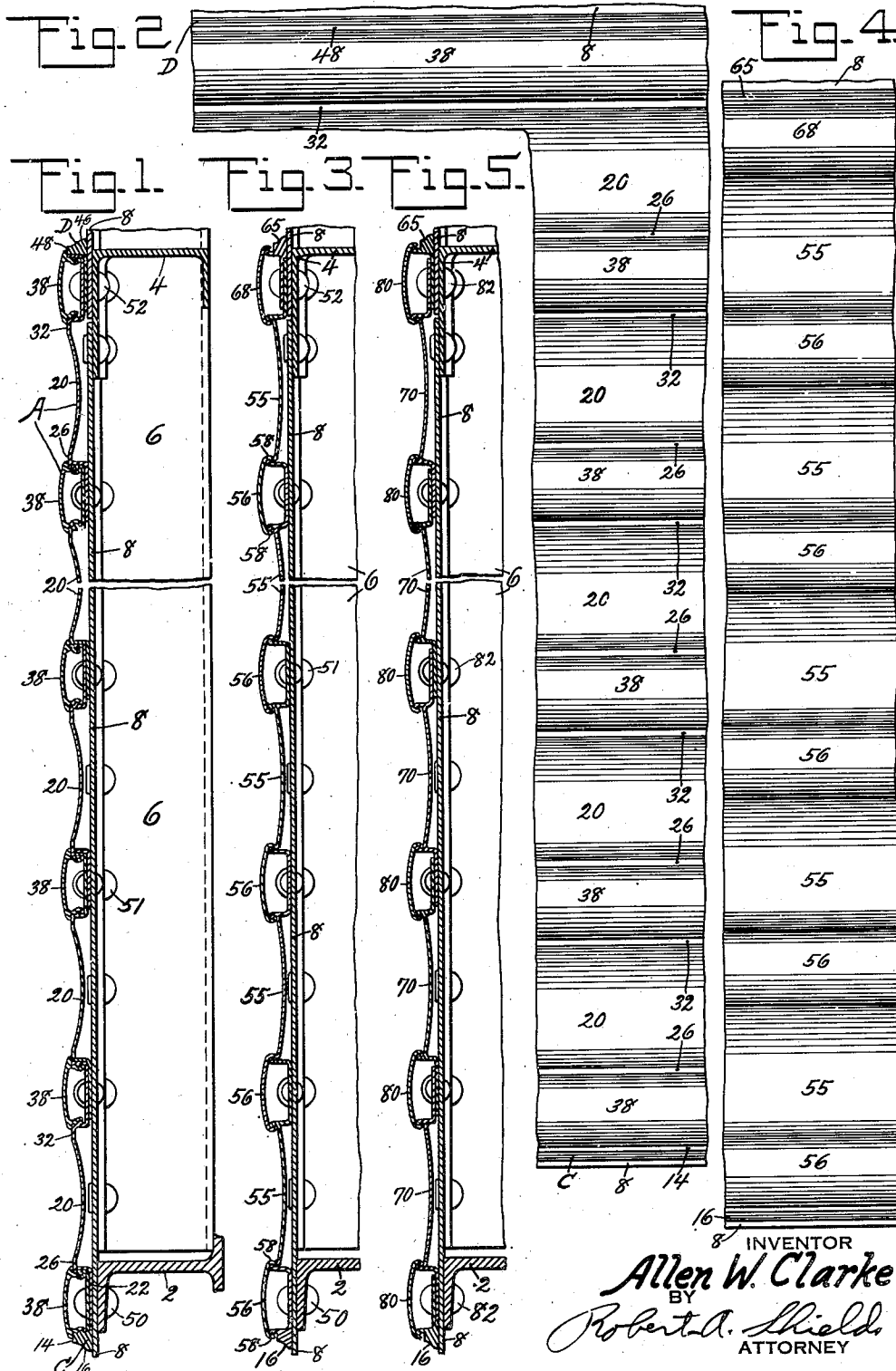
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2,480,321

METAL PANELING

Filed May 11, 1944

2 Sheets-Sheet 1



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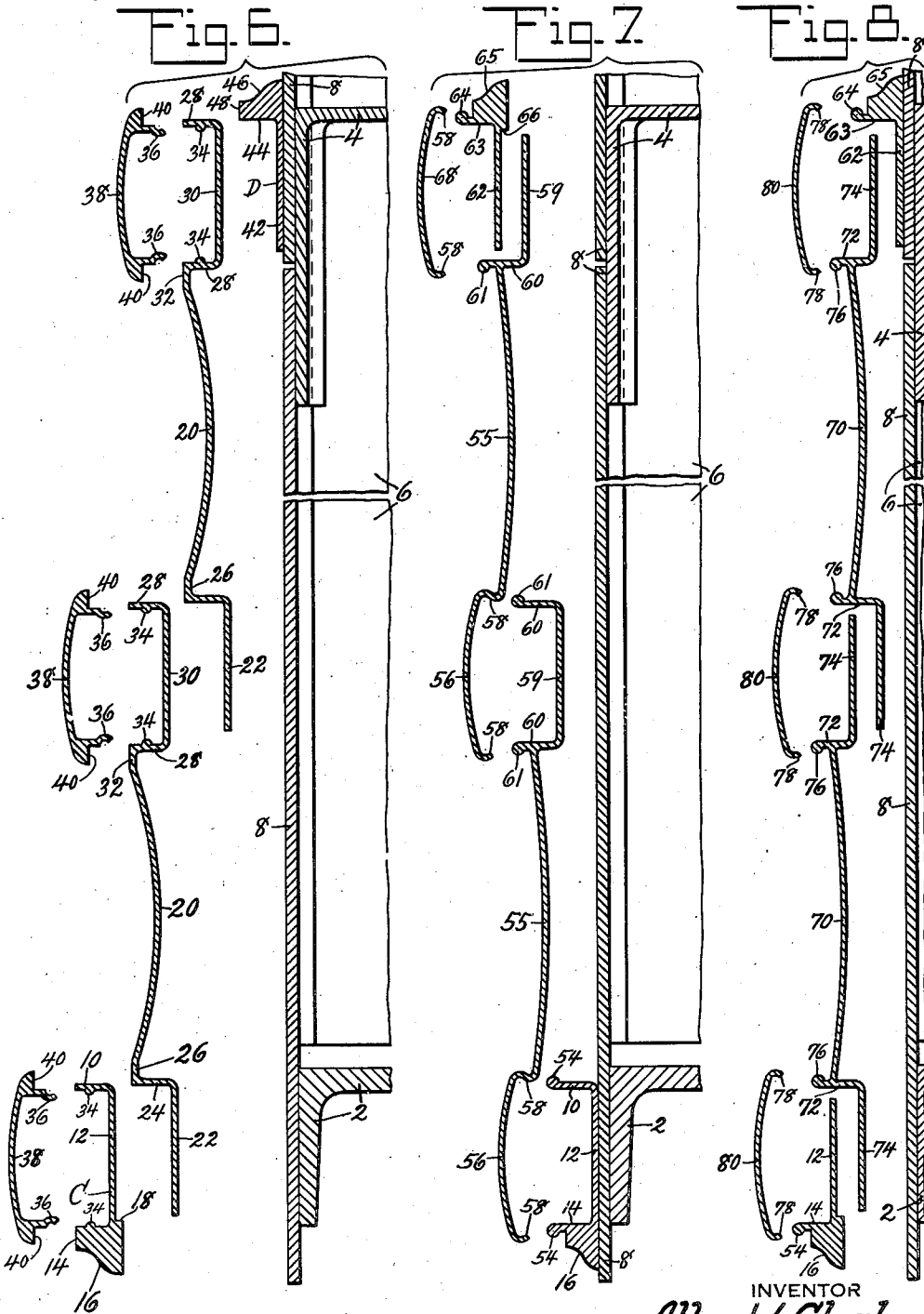
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METAL PANELING

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This invention relates to ornamental metal paneling in general and in particular to such paneling for use on the outside surface of vehicles, such as buses and railway cars.

Certain ornamental designs have been used for vehicles and which produced surfaces of pleasing appearance but which were hard to apply due to numerous parts and lack of control over the proper spacing of the elements forming the surface. It is an object, therefore, of the present invention to provide a simple metallic paneling which may be readily applied to the supporting structure to protect and reinforce the same.

A further object of the invention is the provision of simple metal paneling formed with elements exactly spaced for the reception of snap mouldings covering the securing means for the paneling.

A still further object of the invention is the provision of simple metal paneling formed of duplicate parts extruded from some ductile metal, such as aluminum.

A still further object of the invention is the provision of simple metal paneling formed of duplicate parts cooperating with simple finish members to provide a continuous surface of pleasing design.

These and other objects of the invention will be apparent to persons skilled in the art from a study of the following description and accompanying drawings, in which:

Fig. 1 is a sectional view taken through a vehicle side wall;

Fig. 2 is an elevational view of a portion of the side wall;

Fig. 3 is a sectional view similar to Fig. 1 but showing a modification thereof;

Fig. 4 is an elevational view of the paneling shown in Fig. 3;

Fig. 5 is a sectional view similar to Fig. 3 but showing a still further modification producing substantially the same appearance in elevation as will the form of Fig. 3;

Figs. 6, 7 and 8 are sectional views showing respectively the forms of Figs. 1, 3 and 5 with the parts in their exploded or preassembly positions.

Referring now to the drawings in detail, it will be seen that the complete ornamental paneling A has been applied to a supporting structure, such as a vehicle body having side sill elements 2, belt rails 4, posts 6 and a stiffening sub-sheathing 8 securely fastened to the sills, belt rail and posts. It will be obvious that this sub-sheathing may be made as a solid sheet or may be formed with openings to lighten the sheet, and may be of very

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thin material since it will be stiffened and reinforced by the paneling and particularly by the channel parts thereof, or the sheet may be eliminated in certain cases where the metal paneling is formed of metal of sufficient strength to stiffen the body structural members. It will also be obvious that the metal paneling may cover any part of the supporting structure as well as the part between the sills and the belt rail.

The metal paneling as shown in Figs. 1, 2 and 6 is formed of a plurality of extruded or otherwise formed elements adapted to interengage to provide a finished surface of pleasing design. In this form the bottom finish strip C is of channel form having an upper flange 10, web 12 and lower flange 14 thickened a substantial amount so that its outer surface may be curved as at 16 to provide in effect a moulding element integral with the channel. The thickened flange 14 is projected beyond the web so as to provide a ledge or offset 18 of sufficient depth as to accommodate a flange of the main panel sheets now to be described. Each of the main panel sheets is formed with angular side edges joined together by a curved or inwardly bowed section 20. The lower angular edge is formed as a Z having a vertical flange 22, horizontal web 24 and short vertically directed flange 26 merging into the curved or bowed section 20. The upper angular edge of the panel is formed as a channel having flanges 28 joined by web 30 and with one of the flanges 28 reflanged as at 32 and merging into the curved or bowed portion 20. The angular edges of the panel may also be considered as formed of an angle and a channel with certain flanges joined together by a curved or bowed member 20 having flat side portions 26 and 32. The flanges 28 of the channel edge are formed with inwardly projecting beads 34 disposed intermediate the outer edge of flanges 28 and the web 30. The projections 34 are adapted to engage with and be gripped by curved flanges 36 of a snap-on moulding member of channel form and having a curved web 38 joining the flanges 36. The web and flanges of this member are thickened and extended so as to provide a curved exterior surface and an interior surface or ledge 40 of an extent substantially equal to the flat portions 26 and 32 of the main panel members. As shown, the channel form moulding has the web curved or bowed in a direction reverse to the curved portion 20 of the main panel and when in position will form a curved surface connecting the curved surfaces 20. The upper finish strip D is of angle form having a vertically directed flange 42 and an outwardly directed flange 44, which flange is

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thickened to provide a curved outer surface 46 and is of sufficient thickness to provide an edge portion 48 of substantially the same extent as the ledge portion 40 of the channel form moulding. As shown in Fig. 1, these various parts are assembled by riveting or otherwise securing the bottom finish strip C and the flange 22 of the lower panel to the supporting structure by suitable means, such as a rivet 50. The adjacent panels are secured together with the channel edge engaging with the angle edge of the next adjacent panel and all securely held in position on the supporting structure by securing means, such as rivets 51. Thus the angle edge and channel edge will combine to form longitudinal stiffeners for the sub-sheathing 3 previously referred to. After the desired number of panels have been secured to the supporting structure, the top finish member D is applied and held in position by securing means, such as rivets 52 extending through the finish member and through the web of the channel edge of the topmost panel member. After the panels and finish strips are securely attached to the supporting structure the mouldings may be snapped into position with their flanges 36 engaging the beads 34. It will be apparent that if desired the bead may be formed on the flanges 36 of the moulding member, in which case recesses would be formed in the flanges 28 of the channel edge of the panel. Regardless of how the retaining means is formed on the panel and moulding, it will be apparent that an exact spacing is obtained since the parts are formed in dies and the application to the supporting structure can not deform or change such spacing.

In the form shown by Figs. 3, 4 and 7 the bottom finish member is of substantially identical form to that just described and accordingly the same reference numerals will be applied wherever possible. In this form of lower finish member, however, the edges of flanges 10 and 14 are thickened to form beads 54, one of which is spaced outwardly from the curved portion 16 of the thickened flange 14. The main panels in this modification are formed with angular edges of substantially channel cross-section but facing in opposite directions and joined by the curved portions 55. The lower or inwardly facing channel is formed by a curved web 56 and inwardly hooked flanges 58, one of which merges with the curved portion 55. The upper edge has the channel faced outwardly and formed by web 59 and flanges 60, the edges of which are thickened to provide beads 61. The curved flanges 58 previously referred to are adapted to grip and firmly engage either the beads 54 of the finish strip or the beads 61 of the next adjacent strip, depending upon the position of the panel on the structure. As most clearly shown in Fig. 7, the top panel has the upper flange 60 cut off so as to give an angle form top edge to this last panel, with the leg of the angle formed by the web 59. The cut-away flange has substituted therefor a top finish strip of angle formation having a leg 62 and a flange 63 enlarged at its outer edge to provide a bead 64. The flange 63 and part of the leg 62 are enlarged or thickened to form a curved outer surface 65 and a ledge 66 adapted to engage the free edge of the cut-off web 59 of the top panel. The paneling just described is applied to the structure by first securing the bottom finish strip in position, after which the lower panel has its inwardly faced channel snapped over the finish strip so that curved flanges 58 engage and grip beads 54, then rivets or other securing means 51 are passed

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through the supporting structure and web 59. Subsequent panels are applied in the same manner, with the last panel having securing means extending through the leg 62 of the finish strip and through the cut web 59 and supporting structure, all as clearly shown in Fig. 3. In order to close the space between the last bead 61 and bead 64 of the top finish strip, a single snap moulding 68 is provided which is identical with the inwardly faced channel formed at the bottom edge of each panel. Thus it will be seen that the decorative wall structure is formed with a top and bottom finish strip and panels of substantially identical form having the moulding strip and secure portions formed integral with the curved portion 55. The structure is completed by the single loose moulding strip 68. This form will like that previously described provide longitudinal stiffeners of channel form for the sub-sheathing 3.

Referring now to the modification disclosed in Figs. 5 and 8, it will be seen that this form is very similar in appearance to that shown by Figs. 3, 4 and 7. In this form, however, the bottom finish strip is substantially identical to the top finish strip of Figs. 3, 4 and 7 and accordingly the same reference numerals have been applied. Also since the top finish strip is substantially identical to the bottom finish strip with the one flange removed, the same reference numerals have also been applied to this top finish strip as were applied to the corresponding portions of the lower finish strip of Figs. 3 and 7. The main panels in this modification are formed with a central curved portion 70 merging at its edges into an intermediate portion of a flange 72 of the angle form edge members having vertically directed legs 74. The edges of flanges 72 are enlarged to provide beads 76 adapted to be engaged and firmly gripped by inturned flanges 78 of curved channel form moulding 80. In this form all panels are identical and are secured to the supporting structure by means, such as rivets 82, passing through the overlapped flanges 74 of the adjacent panels and through the sub-sheathing 3 thereby reinforcing and stiffening the same. It will be obvious that one of the flanges 72 of each panel will be shorter than the other flange 72 in order that the beads 76 will be brought substantially into the same plane when the sheets are overlapped as shown; that is, one flange 72 must be shorter than the other by an amount equal to the thickness of leg 74 of the adjacent panel. After the panels and finish strips are securely fastened to the supporting structure, the next number of channel form snap mouldings 80 are forced into position with their flanges 78 engaging the beads 76. With this modification it will be necessary to use gauge blocks between adjacent flanges 72 in order that the beads of adjacent panels may be properly spaced during attachment of the overlapped legs 74 to the supporting structure.

It will be seen that in all modifications the adjacent panels are of substantially identical construction and cooperate with either loose or attached moulding strips and top and bottom finish strips. Likewise in all modifications the paneling is secured to the sub-sheathing and provide longitudinally extending stiffeners therefor of general channel cross-section. It will also be seen that with the modifications shown in Figs. 1 to 4 inclusive, 6 and 7 the exact spacing between the mould securing means is maintained constantly since the securing means are formed integral with the panel and their position need not be modified

during application of the panel to the supporting structure. It will likewise be obvious that various modifications and rearrangements of parts, other than those shown and described, may be made and all such modifications and rearrangements of parts are contemplated as will fall within the scope of the appended claims defining my invention.

What is claimed is:

1. Metal paneling for sheathing a structure comprising substantially duplicate panel members having a main body portion merging into marginal edge portions of angular cross-section, one of said marginal edge portions being of channel formation with enlargements formed integral with the flanges thereof for the reception and retention of a moulding strip spanning the space between the channel flanges.

2. Metal paneling for sheathing a structure comprising substantially duplicate panel members each having a main body portion merging into marginal edge portions, one of said marginal edge portions being of angular cross-section and having beads formed integral therewith, means securing adjacent panel members together, and a moulding strip member spanning the space between the main body portions of adjacent panels and engaging and retained by said beads.

3. Metal paneling for sheathing a structure comprising substantially duplicate panel members each formed with a main body portion merging into marginal edge portions, one of said marginal edge portions of each panel member being of angular cross-section, the other of said marginal edge portions being of channel cross-section with outwardly directed flanges, and moulding strip retaining means formed integral with said outwardly directed flanges.

4. Metal paneling for sheathing a structure comprising substantially duplicate panel members each formed with a main body portion merging into marginal edge portions, one of said marginal edge portions of each panel member being of angular cross-section, the other of said marginal edge portions being of channel cross-section

with outwardly directed flanges, and moulding strip retaining means formed integral with said outwardly directed flanges, said moulding strip retaining means consisting of beads formed on the inner surface of said outwardly directed flanges.

5. A metal paneling as set forth in claim 2 in which said main body portions and moulding strips are curved in opposite directions.

6. A metal extrusion comprising a curved portion formed with a flat marginal portion at one edge, a channel member having outwardly directed flanges with one flange merging into said flat marginal edge portion, and a Z form member having one flange thereof merging into the other edge of said curved portion.

7. An extrusion as set forth in claim 6 in which the web of said channel and the other flange of said Z form member are located substantially in the same plane.

8. An extrusion as set forth in claim 6 in which projections are formed on the inner surfaces of the flanges of said channel member.

9. A metal extrusion comprising a channel member having the flanges directed outwardly, a flange formed on and extending from one of said flanges, a Z form member, and a curved portion merging into said extended flange at one edge and at the other edge merging into one flange of said Z form member.

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