

"PANELLING AND CARRIERS THEREFOR"

5 The present invention relates to panelling and to carriers for supporting panelling.

 One type of panelling has panels which are each formed with a main substantially flat panel portion which has an inturned side portion on each of two opposite sides. One
10 of these side portions has, at its free edge, a rim which is turned inwards and the other side portion has, at its free edge, an arm which is turned away from the one side portion.

 These panels are conventionally mounted on carriers which themselves are mounted on a wall or ceiling
15 structure to be clad by the panelling. The flanges of the carriers are conventionally provided with lugs usually all bent down and back parallel to the flanges in the same direction. A panel is mounted with the arm being supported on one lug and the rim on the adjacent lug and the next panel is then
20 introduced so that its arm engages above the rim of the already fitted panel and abuts against the flange, the rim and arm being urged upwardly by the resilience of the lug. This arrangement is generally satisfactory, at least in the short term, in that it provides a pleasant appearance to the
25 panelling, the arm in each case bridging the gap between the main panel portions, so that the carriers cannot be seen.

- 2 -

A problem arises with this construction because, in order to ensure that the panels are held firmly, the lugs are made resilient and urge the panels up against the flanges of the carriers. It will be appreciated that if the panels
5 are removed on one or two occasions to attend to wiring or plumbing or the like behind the panelling, then the lugs will become progressively weakened and experience has shown that very often they tend to snap off. This is, of course, totally unsatisfactory.

10 However, more elaborate arrangements have been proposed but none of these overcomes the basic problem of the system above.

It is now proposed, according to the present invention, to provide a carrier for supporting panelling, the panels of
15 which each have a main panel portion with an inturned side portion on each of two opposite sides, one side portion having at its free edge a rim turned towards the other side portion, and the other side portion having, at its free edge, an arm turned away from the one side portion, said
20 carrier comprising an elongate body securable to a support structure; at least one flange or body portion carried by said body;

a plurality of lugs on said
at least one flange or body portion, the lugs being arranged
25 in pairs, with the pairs of lugs being longitudinally spaced

from one another and with the lugs of a pair being laterally spaced, the first lug of each pair being substantially rigid and including a tongue spaced from an adjacent flange or body portion surface to accommodate the rim of one panel and the arm of an adjacent panel, the second lug of a pair being mounted on said at least one flange or body portion, to urge the arm and rim of adjacent panels against the tongue of the first lug.

Such a structure overcomes the difficulties indicated above insofar as the rigid first lug of each pair takes up the load of the panels and it does not get subjected to any particularly high forces during insertion and removal of the panels. The provision of the second lug of each pair, which is laterally spaced from the first lug of that pair, ensures that the arm of one panel and the rim of the adjacent panel are together pushed towards and against the rigid lug respectively. The second lugs may be resilient which permits them to flex back during insertion and removal. Alternatively, the second lugs may be rigid, and the inherent resilience of the flange of the carrier and/or of the panels will permit flexing thereof to allow the panels to be inserted and to retain the panels urged against the first lugs.

In a preferred construction the lugs are arranged in two substantially parallel longitudinally extending rows and the lugs in each row are preferably alternately of one

type and of the other type. Two rows of lugs of each type may also be provided in "double pairs", the lugs of a pair being different or the lugs of a pair being the same but different from the other pair.

- 5 The body may take many forms. For example it may be simply the upright of an L, with a single flange providing with this upright an L-shaped cross-section.

Another form of carrier is of generally inverted, V- or U-shaped cross-section or of T-shaped cross-section, 10 there being two flanges, either forming the arms of the T or provided one on each leg of the V or U, and extending away from one another. When the second lugs are rigid, the inverted V- or U-shaped cross-section carriers, with flanges, are particularly advantageous, because the flanges can give 15 sufficient resilience to enable the panels to be mounted and demounted. The body and flanges may be formed from a single flat sheet by rolling.

Whichever form the carrier takes, the lugs are advantageously formed by punching out of the associated 20 flange, whereby they include a connecting portion and tongue, and preferably, but not exclusively, for the first lugs, both the connecting portion and tongue are provided with a reinforcing rib.

The second lugs may be punched out of the associated 25 flange whereby they include a connecting portion and a leg,

the leg being engageable with the arm of a panel to urge it towards the tongue of the associated first lug.

With this arrangement, the leg may have adjacent to, but spaced from, its free end, a projection which is
5 adapted to engage behind a bead formed on the arm of a panel. This bead will be urged into engagement with the connecting portion of the first lug by the projection which will make removal accidentally more difficult. Thus the projection and bead form a type of latch which holds the panels in
10 place.

The leg of the second lug of a pair may extend from its connecting portion in the opposite direction or in the same direction to that which the tongue of the first leg of that pair extends.

15 The invention also provides a panelling system comprising panels which each have a main panel portion with an inturned side portion on each of the two opposite sides, one side portion having at its free edge a rim turned towards the other side portion, and the other side portion having at its
20 free edge an arm turned away from said one side portion, a plurality of carriers each comprising an elongate body securable to the support structure, at least one flange or body portion carried by said body, with a surface parallel to the main panel portion when the panels are mounted, a
25 plurality of lugs on said at least one flange or body portion, the lugs being arranged in pairs, with the pairs

of lugs being longitudinally spaced from one another and with the lugs of a pair being laterally spaced, the first lug of each pair being substantially rigid and including a tongue spaced from the adjacent flange surface to accommodate the rim of one panel and the arm of adjacent panel, the second lug of a pair being mounted on the flange or body portion to urge the arm and rim of adjacent panels against the tongue of said first lug.

In order that the invention may more readily be understood, the following description is given, merely by way of example, reference being made to the accompanying drawings, in which:-

Figure 1 is a side elevation of one embodiment of carrier and panelling according to the invention;

Figure 2 is a perspective underneath view of the carrier of Figure 1;

Figures 3 and 4 and Figures 5 and 6 are similar views to Figures 1 and 2 of two modified constructions; and

Figures 7 and 8 are schematic perspective scrap portions of two further embodiments of carrier according to the

invention.

Referring first to Figure 1 of the drawings, there is illustrated a carrier 10 which comprises a body 11 of inverted U-shaped cross-section, provided with two side flanges 12 and 13 which extend outwardly away from one another from the free ends of the U-section body. As can be seen more clearly in Figure 1, the body has openings 14 to enable the carrier to be supported.

The flanges 12 and 13 are each provided with a longitudinally extending row of lugs. The lugs alternate so that they include a first type of lug 15 and a second type of lug 16.

It will be noted that the lugs 15 of the flange 12 are laterally spaced from the lugs 16 of the flange 13. Similarly the lugs 15 of the flange 13 are laterally spaced from the lugs 16 of the flange 12. Therefore, the carrier as a whole has longitudinally spaced pairs of lugs, the lugs of a pair being laterally spaced with respect to one another and one lug of the pair being of the first type and one lug of the pair being of the second type.

Both the lugs 15 and 16 are punched out of the flanges 12 and 13. The lugs 15 are rigid lugs and consist of a connecting portion 17 and a tongue 18. Both the connecting portion and the tongue are reinforced by a rib 19 to make the lug rigid. It will be noted that the free end 20 of the tongue is bent down to provide a curved end portion extending

away from the flange 12, 13.

The lugs 16 have a connecting portion 21 and an elongate leg 22 which is provided with a projection 23 which is adjacent to but spaced from the free end of the leg.

5 As shown in Figure 1, the panels which the carrier supports include a main portion 30 which is substantially flat, and side portions 31 and 32. The side portion 32 is provided with an arm 33 which extends away from the side portion 31 and is formed, adjacent its free end, with a
10 bead 34.

The other side arm 31 has an inturned rim 35.

In order to mount the panels on the carrier, the first of the panels is engaged so that its arm is above one rigid lug 15 the rim is above another of the lugs 15 and
15 the panel is moved to the right, as seen in Figure 1. The next panel is then taken and its arm is pushed above the rim 35 of the previously assembled panel and so that its bead engages the leg of the lug 16 thereabove. The leg, being somewhat longer than the tongue, is resilient and flexes upwardly
20 until the bead 34 has got beyond the projection 23 which then snaps down behind the bead. At the same time, the rim engages behind the next tongue 18. The panelling system is built up successfully in this way.

The curved down end portion 20 facilitates the
25 introduction of the arm 33 and of the rim 35.

The construction shown in Figures 3 and 4 is

generally similar except here the connecting portions of the lugs 16A are at the same end as the connecting portions of the lugs 15A. The construction of Figures 3 and 4, therefore, is easier to insert the panels but more difficult to remove and the construction of Figures 1 and 2 the other way round.

The effect of the resilient lug 16 is to facilitate the introduction of the arms of the panels but at the same time to hold the arm of one panel and the rim of the adjacent panel firmly against the lug to prevent any rattling. Since the lugs 15 are rigid, there will be little tendency for these lugs to be snapped off upon repeated insertion and removal of the panels.

Figures 5 and 6 show a further arrangement in which both the first and second lugs 15B and 16B are made rigid. The lugs 16B will press on the top of the arms 33B of the panels and will urge the panels against lugs 15B. The resilience of the flanges 12B, 13B and/or of the arms 33B will allow a slight flexing thereof to cause resilient urging of the panels against the lugs 15B, thereby preventing rattling and facilitating insertion and removal of the panels.

Figures 7 and 8 are generally similar to either Figures 1 and 2, except that instead of having an inverted U- or V-shaped body portion, the carrier is of a generally T-shaped cross-section in Figure 5 and of a generally L-shaped cross-section in Figure 6. It will be noted that the cross-section of Figure 5 is formed by rolling over a single sheet of material so that it is a generally conventional carrier of this type.

- 10 -

Lugs 25 are provided to prevent a panel being moved too far away from lugs 15B when the panel is being inserted or removed, thereby ensuring that the adjacent panel is not disturbed.



37

C L A I M S

1. A carrier for supporting panelling, the panels of which each have a main panel portion with an inturned side portion on each of two opposite sides, one side portion having at its free edge a rim turned towards the other side portion, and the other side portion having, at its free edge, an arm turned away from the one side portion, said carrier comprising an elongate body securable to a support structure; at least one flange or body portion carried by said body; a plurality of lugs on said at least one flange or body portion, the lugs being arranged in pairs, with the pairs of lugs being longitudinally spaced from one another and with the lugs of a pair being laterally spaced, the first lug of each pair being substantially rigid and including a tongue spaced from an adjacent flange or body portion surface to accommodate the rim of one panel and the arm of an adjacent panel, the second lug of a pair being mounted on said at least one flange or body portion, to urge the arm and rim of adjacent panels against the tongue of the first lug.

2. A carrier according to claim 1, wherein there are two flanges or body portions and one lug of a pair is arranged on one flange or body portion and the other lug of a pair is arranged on the other flange or body portion.



- 12 -

3. A carrier according to claim 1, wherein both lugs of a pair are arranged on the same flange or body portion.

4. A carrier according to claim 1, 2 or 3, wherein the lugs are arranged in two substantially parallel longitudinally extending rows and the first and second lugs of consecutive pairs are alternately in one row and in the other row.

5. A carrier according to any preceding claim, wherein the second lugs of a pair are substantially rigid.

6. A carrier according to any one of claims 1 to 4, wherein the second lugs of a pair are resilient.

7. A carrier according to any preceding claim, wherein the first and second lugs are formed by punching out of the associated flange or body portion, whereby the first lugs include a connecting portion and said tongue and are provided with a reinforcing rib and whereby the second lugs include a connecting portion and a leg, the leg being engageable with the arm of a panel to urge it towards the tongue of the associated first lug.



39

- 13 -

8. A carrier according to claim 7, wherein the leg has adjacent to, but spaced from, its free end, a projection adapted to engage behind a bead formed on the arm of a panel.

9. A carrier according to claim 7 or 8, wherein the leg of a second lug of a pair extends from its connecting portion in the opposite direction to that which the tongue of the first lug of that pair extends.

10. A carrier according to claim 7 or 8, wherein the leg of a second lug of a pair extends from its connecting portion in the same direction as that which the tongue of the first lug of the pair extends.

11. A carrier according to any preceding claim, wherein each pair of lugs has associated therewith a further lug positioned to prevent a panel being moved too far away from the first and second lugs of the pair when the panel is being inserted or removed to ensure that the adjacent panel is not disturbed.

12. A panelling system comprising panels which each have a main panel portion with an inturned side portion on each of the two opposite sides, one side portion having at its



40

- 14 -

free edge a rim turned towards the other side portion, and the other side portion having at its free edge an arm turned away from said one side portion, a plurality of carriers each comprising an elongate body securable to a support structure, at least one flange or body portion carried by said body, with a surface parallel to the main panel portion when the panels are mounted, a plurality of lugs on said at least one flange or body portion, the lugs being arranged in pairs, with the pairs of lugs being longitudinally spaced from one another and with the lugs of a pair being laterally spaced, the first lug of each pair being substantially rigid and including a tongue spaced from the adjacent flange surface to accommodate the rim of one panel and the arm of adjacent panel, the second lug of a pair being mounted on the flange or body portion to urge the arm and rim of adjacent panels against the tongue of said first lug.

13. A system according to claim 12, wherein the second lugs include a connection portion and a leg, the leg being engaged with the arm of a panel to urge it towards the tongue of the associated first lug, the legs of the second lugs each having adjacent to but spaced from their free ends, a projection engaged behind a bead formed on the arm of the panel, to resist removal of the arm from the lugs.



- 15 -

14. A carrier for support panelling, said carrier being substantially as hereinbefore described, with reference to and as illustrated in Figures 1 and 2, Figures 3 and 4 or Figures 5 and 6 of the accompanying drawings, or as modified in Figure 7 or Figure 8 of the accompanying drawings.

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