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(54) Metal partition studding

(57) Channel profile studding lengths (10a, 10b) are dimensioned to be assembled in nested relationship to form a spliced or boxed stud assembly in the construction of partitioning, wall linings and the like; a web (12) of each length bounded by flanges (14, 16) having a longitudinally spaced series of inward projections (22), e.g. pressed dimples or punchings or slit and raised portions, against which the edge of a return portion or lip (18) of the flange of the nested length locates to prevent relative lateral movement of the lengths 10*a*, 10*b*.

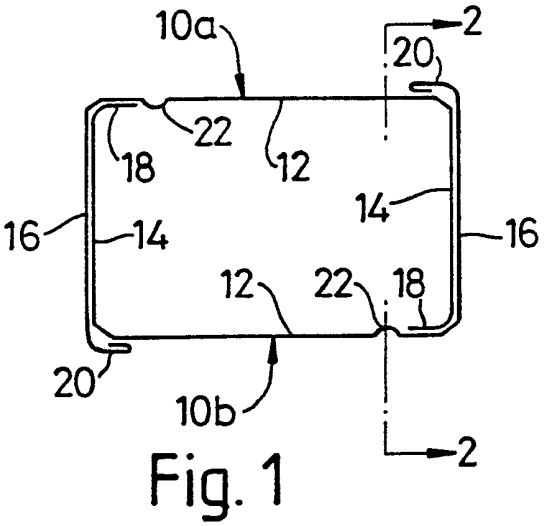

Fig. 1

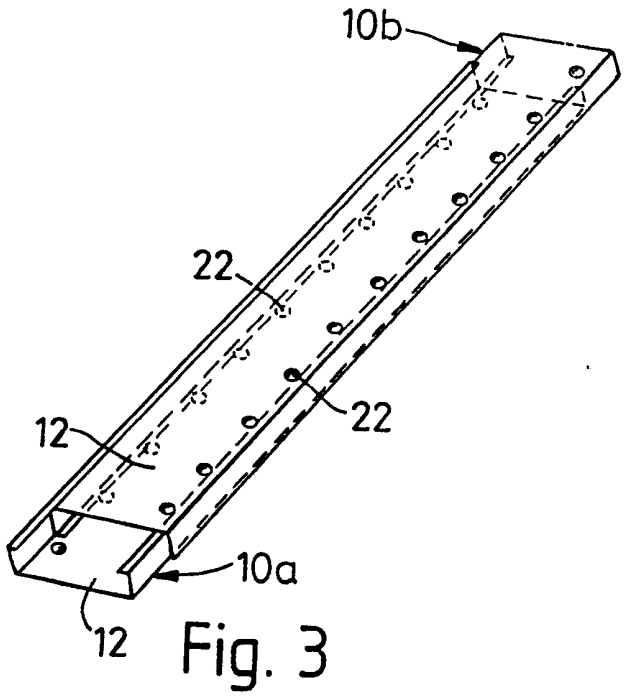

Fig. 3

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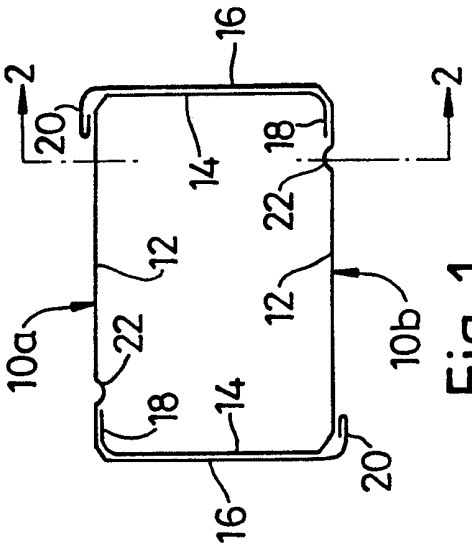

Fig. 1

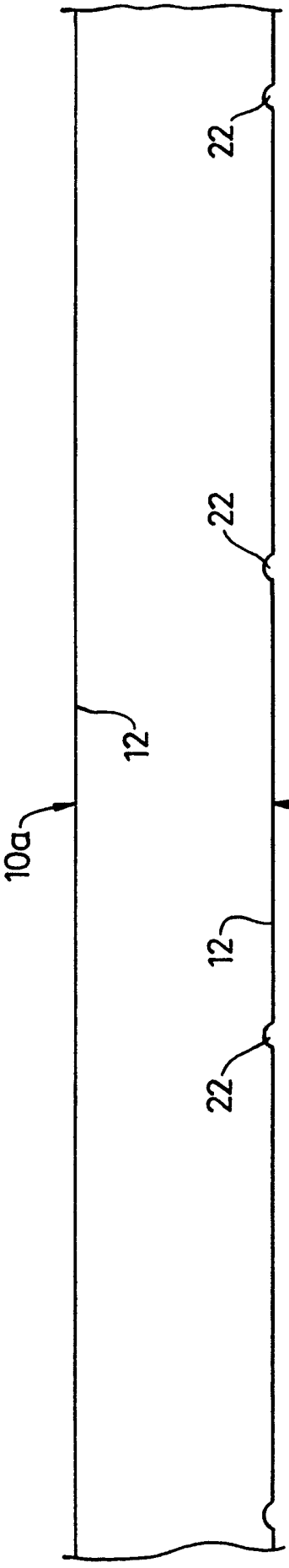

Fig. 2

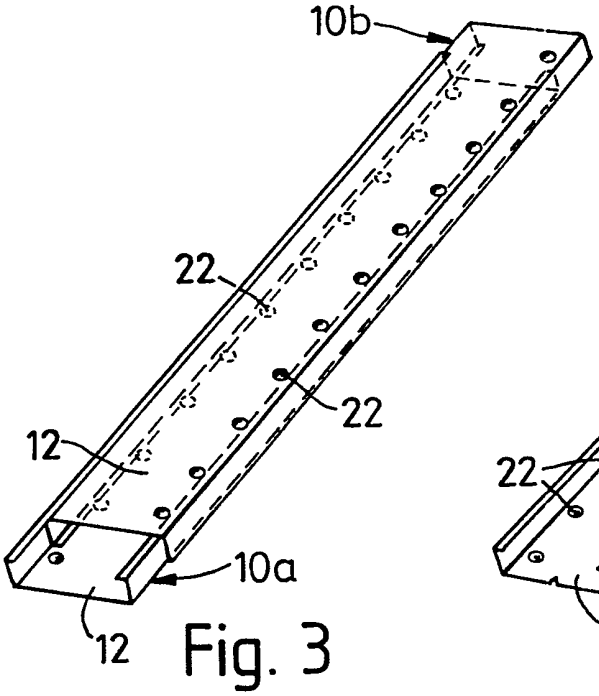

Fig. 3

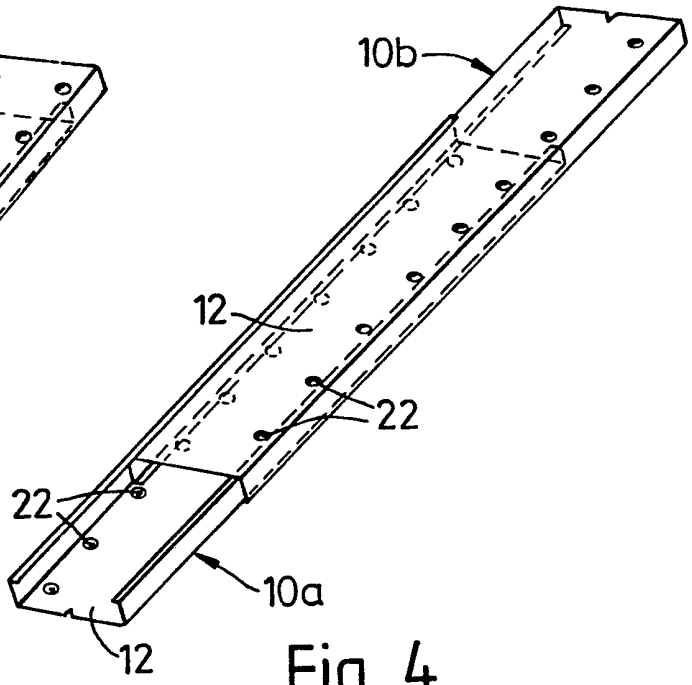

Fig. 4

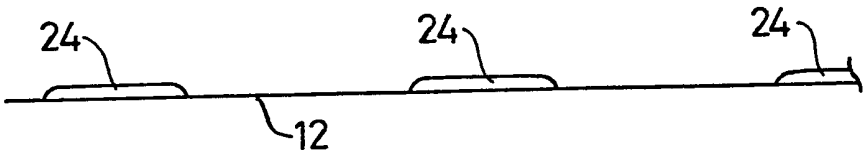

Fig. 5

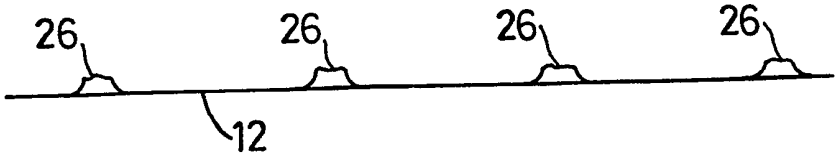

Fig. 6

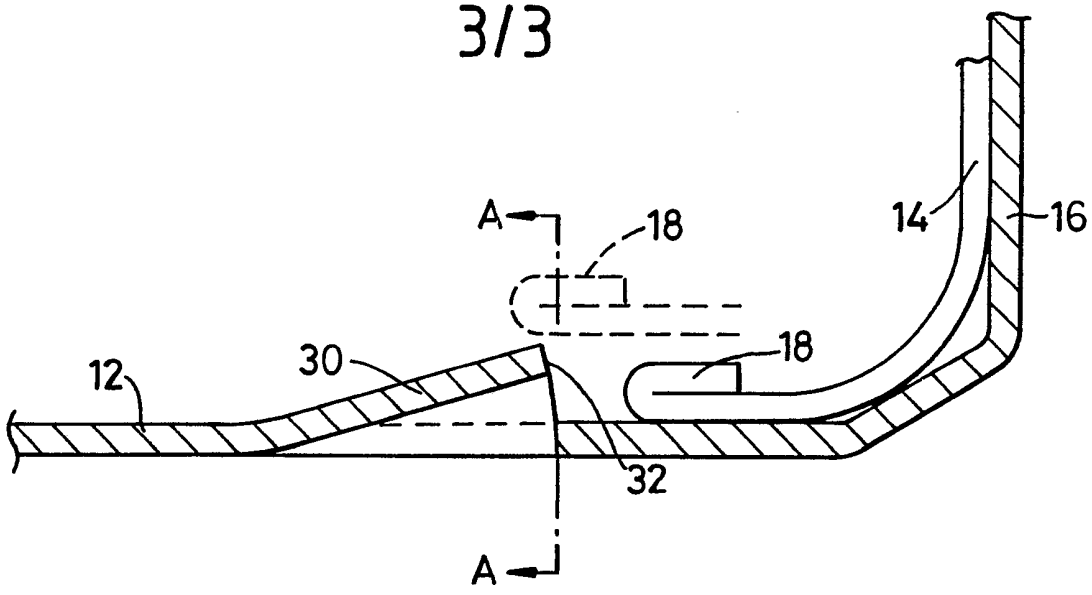

Fig. 7

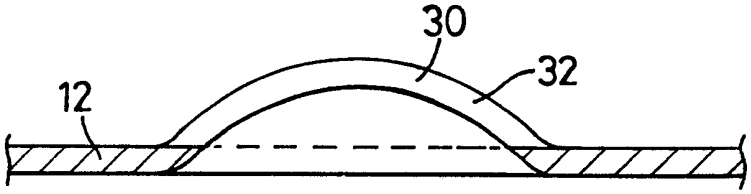

Fig. 8

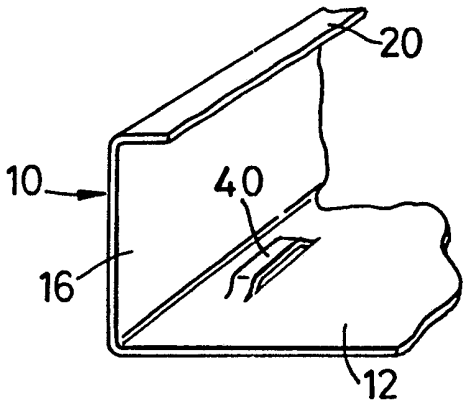

Fig. 9

METAL PARTITION STUDDING

This invention relates to studding for use in the construction of partitioning e.g. in the form of non-load bearing walls and/or linings for facing walls or other structures, said partitions or linings comprising a metal framework which is clad with wall board or the like. The invention is primarily concerned with metal studding used to form the normally vertical members of the said framework as by having its upper and lower ends located in horizontal channel section mounted on the floor and ceiling. It will be appreciated that the framework may include further members e.g. additional horizontals bridging the vertical studding for added rigidity, and that if the studding is being used to form a cladding on the face of an already constructed wall or other structure it may be attached directly to the latter.

The object of the invention is to provide a metal studding section which is economical to manufacture, durable and rigid, and which facilitates assembly and erection of the framework.

According to the invention there is provided a metal studding section having a channel profile comprising a web and parallel spaced first and second flanges extending normally from respective side edges of the web, said flanges terminating in return portions being margins of the flanges turned inwardly towards each other in planes spaced parallel to the web with the first flange being narrower than the second flange to permit two lengths of the section to be nested co-extensively in whole or in part with their webs oppositely directed and the outer faces of their first flanges abutting the inner faces of their second flanges to provide a spliced or boxed stud assembly, the webs having inwardly projecting locating means providing abutment for the edges of the return portions of the first flanges to prevent relative lateral displacement of the two lengths so nested in use characterised in that said locating means comprises a longitudinally spaced series of projections out of the

plane of the inner face of each web for localised abutment at intervals along the associated said edge of the first flange return portion of the other section so nested in use.

The section will preferably be cold formed metal galvanised mild steel sheet or strip, typically galvanised mild steel, the locating projections being provided in the course of its forming along with any other shaping required e.g. the provision of cut-outs for facilitating location of other members of the framework and/or knock-outs for accommodating wiring or other services, and/or knurling or the like of outer faces of the flanges to facilitate insertion of fastenings for securing the wall board or other cladding thereto.

Examples of the invention are now more particularly described with reference to the accompanying drawings wherein

Figure 1 is a cross-section of two lengths of studding section in nested relationship;

Figure 2 is a longitudinal section on line 2-2 of Figure 1;

Figures 3 and 4 are perspective diagrammatic views of the two lengths arranged to provide boxed and spliced stud assemblies respectively;

Figures 5 and 6 are diagrammatic illustrations of two alternative forms of locating projections;

Figure 7 is an enlarged sectional detail to show a third alternative form of locating projection;

Figure 8 is a sectional view on line A-A of Figure 7; and

Figure 9 is a perspective view of part of another form of section.

Figures 1 and 2 show two lengths of identically formed metal studding section 10a,10b. Each length has a channel profile of generally oblong cross-section comprising a web 12 and a pair of parallel spaced first and second flanges 14,16 extending normally from respective side edges of the web 12. Each said flange terminates in a respective narrow return portion or lip

18,20 (Figure 1) being margins of the respective flanges turned inwardly towards each other in planes parallel to the web 12 of that length.

Flanges 14 are somewhat narrower than flanges 16 so that the lengths 10a,b can be fitted in the nested relationship shown in Figure 1 with webs 12 oppositely directed and the outer faces of the narrower flanges 14 abutting the inner faces of the wider flanges 16.

Mutually engaged in this way the two lengths provide a spliced or boxed stud assembly e.g. as illustrated in Figures 3 or 4. The lengths may be arranged to be co-extensive or near co-extensive as shown in Figure 3 to provide a particularly rigid box section stud assembly; preferably the ends of the respective lengths are left projecting a short distance at the opposite ends of the assembly to facilitate their reception and securing in mounting channel or tracks secured horizontally e.g. along a floor and ceiling. In Figure 4 the nesting overlap is used along a shorter portion of the lengths of section to connect them together and adjust the total effective lengths as required.

In order to locate the nested assembly positively and prevent disengagement of the two lengths 10a,b by lateral displacement each web 12 is provided with a longitudinally spaced series of inward projections 22 which, in this example, are formed as dimples pressed inwardly of the web to provide circular domed projections. These projections locate the lips 18 of the first flanges 14 by abutment with their edges at intervals along their length.

As there are only very localised and small areas of contact between the abutments and said edges the two lengths of section can readily be slid longitudinally into the nested relationship telescopically and the effective overall length of the assembly so formed can readily be adjusted prior to their final securing together. This is in distinction over some known forms of metal studding section in which such abutment is

provided by internally projecting ribbing extending along the full length of the webs e.g. formed by continuous rolling.

Moreover such ribbing reduces the rigidity of the web in that it may have a greater tendency to bow or bend which could cause the flanges thereof to spread or be displaced towards each other which could have the effects of again making erection and sliding adjustment difficult, and reducing the stability of the completed assembly e.g. in resistance to fire. The formation of ribs is less economical in material so that the weight and cost of the section is greater than where the spaced abutments of the invention are used.

The shape and dimensions of abutments 22 can readily be varied as required by simple alterations of the manufacturing machinery e.g. the depth of inward punching can readily be controlled as distinct from the need to provide differently profiled rolls to change the depth of ribbing.

Figure 5 shows an alternative form of abutment projection 24 having an elongated shape, again spaced at intervals along the section web, while Figure 6 shows yet another form in which the web is punched right through to provide abutments 26 having central through openings directed normally to the web, in this way the abutments can have greater projection out of the plane of the inner face of the web 12 for better location without requiring extra material and whilst still giving the low friction localised engagement with the edges of lips 18.

Figures 7, 8 and 9 show yet further alternative forms of abutment projection formed by localised raising and slitting the web 12. In the form shown in Figures 7 and 8 each said projection is arcuate in cross section and tapers in height and radius to merge with the remainder of the web at the part most remote from the adjacent flanges 16, only a single slit being made for each projection. The slitting forms an aperture directed towards said flange bounded by an edge 32 of the

projection seen end on in Figure 8, said edge being in a plane normal to that of the web to provide a step. This edge abuts the lip 18 of the first flange 14 when the two sections are nested (it is shown spaced therefrom in Figure 7 for greater clarity). This form of projection allows telescopic sliding of the two sections 10a, 10b as referred to above and also facilitates their assembly together in a snap fitting manner by relative lateral movement, the tapered shape permitting the lips 18 to spring over the projections 30 as indicated in broken lines in Figure 7 but resisting relative lateral displacement in the opposite direction.

If the above lateral snap fitting facility is not required the form of projection shown in Figure 9 may be used. Here each projection 40 (one only shown) is again formed by localised raising and slitting the web 12 of the section 10 but in this case a pair of parallel slits define a raised flat topped loop, open at each side. Their localised abutment with the edge of the nested second section permits telescopic assembly or adjustment of overall length as referred to above.

The webs may include partly cut through knock-out panels at intervals along their length in known manner e.g. to accommodate wiring or other services, and will preferably have the main parts of flanges 14 and 16 knurled on their outer faces to facilitate drilling, punching or other insertion of screws or other fastening for securing wall boards or other cladding thereto in known manner.

CLAIMS

1. A metal studding section having a channel profile comprising a web and parallel spaced first and second flanges extending normally from respective side edges of the web, said flanges terminating in return portions being margins of the flanges turned inwardly towards each other in planes spaced parallel to the web with the first flange being narrower than the second flange to permit two lengths of the section to be nested co-extensively in whole or in part with their webs oppositely directed and the outer faces of their first flanges abutting the inner faces of their second flanges to provide a spliced or boxed stud assembly, the webs having inwardly projecting locating means providing abutment for the edges of the return portions of the first flanges to prevent relative lateral displacement of the two lengths so nested in use characterised in that said locating means comprises a longitudinally spaced series of projections out of the plane of the inner face of each web for localised abutment at intervals along the associated said edge of the first flange return portion of the other section so nested in use.

2. A section as in Claim 1 manufactured by cold forming metal sheet or strip.

3. A section as in Claim 2 wherein the projections are provided in the course of said forming.

4. A section as in Claim 3 wherein the projections are formed as dimples pressed inwardly of the web to provide domed said projections.

5. A section as in Claim 4 wherein said projections are circular.

6. A section as in Claim 3 or 4 wherein the web is punched through to provide projections having central through openings directed normally to the web.

7. A section as in Claim 2 wherein the projections are

formed by localised raising and slitting the web.

8. A section as in Claim 7 wherein each projection is arcuate in cross section and tapers in height and radius to merge with the remainder of the web at the part most remote from the adjacent flange of the respective section length, a single slit forming an aperture directed towards said flange and bounded by an edge forming a step for abutment with the return portion of another section length flange in use.

9. A section as in Claim 7 wherein each projection is a raised loop defined by a pair of parallel slits.

10. A section as in any preceding claim including partly cut through knock-out panels at intervals along its length.

11. A section as in any preceding claim including knurling on outer faces of the flanges whereby drilling, punching or insertion of fastenings is facilitated.

12. A metal studding section substantially as hereinbefore described with reference to and as shown in Figures 1 to 4; Figure 5; Figure 6; Figures 7 and 8; or Figure 9 of the accompanying drawings.

13. An assembly including at least two lengths of studding section as in any preceding claim.

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