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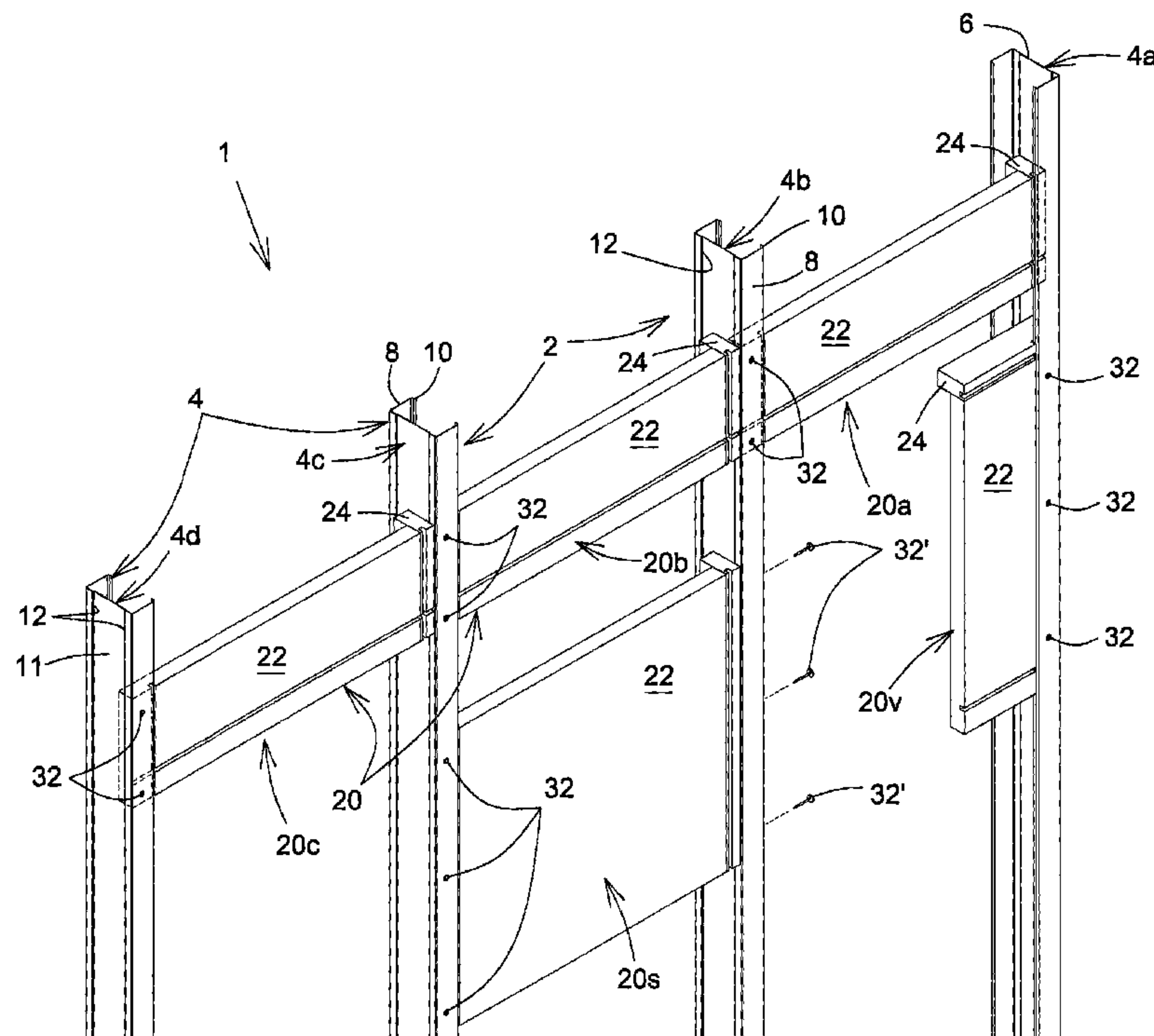
(72) **Inventeur/Inventor:**
BELANGER, GHISLAIN, CA

(73) **Propriétaire/Owner:**
BELANGER, GHISLAIN, CA

(74) **Agent:** EQUINOX

(54) **Titre : APPAREIL DE BLOCAGE DE CLOISON SECHE ET PROCEDE D'INSTALLATION ASSOCIE**

(54) **Title: DRYWALL BACKING APPARATUS AND METHOD OF INSTALLING SAME**



(57) **Abrégé/Abstract:**

A drywall backing apparatus for metal studding consists of a two-limb backing member, with one limb extending orthogonal to the other to present a generally L-shaped form. The metal studding comprises a plurality of U-shaped studs, the flanges of which have overturned edges for engagement and registration with grooves in the backing member which bridges and is secured by fasteners to successive studs to provide suitable fixing for wall furniture.

ABSTRACT OF THE DISCLOSURE

A drywall backing apparatus for metal studding consists of a two-limb backing member, with one limb extending orthogonal to the other to present a generally L-shaped form. The metal studding comprises a plurality of U-shaped studs, the flanges of which have overturned edges for engagement and registration with grooves in the backing member which bridges and is secured by fasteners to successive studs to provide suitable fixing for wall furniture.

10 (Figure 1)

DRYWALL BACKING APPARATUS AND METHOD OF INSTALLING SAME

FIELD OF THE INVENTION

5 The present invention relates to wall construction, and in particular to a method and an apparatus for anchoring wall mounted furniture such as handrails, grab bars, cupboards and other items.

BACKGROUND OF THE INVENTION

10 United States Patent Nos.: 6,705,056 and 7,133,149 disclose a method and an apparatus of anchoring in which backing members are provided for positive location in between successive spatially disposed U-shaped metal studs forming a wall structure, the backing members being interlinked by a hinge. The backing members are provided with grooves which selectively register with overturned edges of the stud flanges thereby giving a positive location for the backing members with hinges affording continuity longitudinally of the wall structure formed by the studding. The backing members, which may be of plywood, are marketed together with the hinge in suitable lengths such as to present an integral combination, which in use constitutes a continuous strapping lengthwise of the studding thus providing flexibility during installation, but rigidity when properly fixed in position by the use of suitable fasteners.

20 Although the prior art recited *supra* represents a valuable contribution in the building trade giving time-saving installation advantages together with the structural integrity demanded by appropriate codes, the combination of the backing members and the hinge is cumbersome in terms of packaging, storage and to some extent in handling.

25 Accordingly, there is a need for an improved system for the installation of metal studding and the provision of the requisite heavy-duty backing members for the attachment of wall-mounted furniture normally to be found in commercial and residential premises.

SUMMARY OF THE INVENTION

It is therefore a general object of the present invention to provide an improved apparatus for and method of providing backing members interstitially between successive studding in a wall structure composed of metal studs.

- 5 A further object of the present invention is to facilitate installation of the backing members to the studding.

Another object of the present invention is to provide apparatus which, when installed correctly, confers on the assembled studding a rigidity, straightness and strength that enable the application of plasterboard sheeting in a uniform
10 plane.

A still further object of the present invention is that the apparatus now proposed provides elements that can be easily packaged, stored and handled.

Another object of the present invention is to provide a kit of parts that can be marketed for both the commercial and DIY (Do-It-Yourself) sectors.

- 15 According to a first aspect of the present invention there is provided a backing member for installation in-between successive U-shaped metal studs forming part of a wall structure, the backing member comprising a first bridging limb having at least one formation for registration with at least a flange of the metal stud, and a second limb in the form of a bracing block extending orthogonally
20 from one end of the first limb and being dimensioned to engage a web of the stud internally or externally thereof, the first and second limbs in use extending in-between successive metal studs and being securable thereto by fasteners.

The primary intention of the backing member is to extend horizontally in-between and brace successive metal studs. However, in an alternative usage
25 of the backing member, it may be disposed vertically at a marginal part of a single stud for securement to a flange thereof and for this purpose the backing member may be provided with a second formation for registration with said flange, the second formation being arrayed orthogonally to the first-mentioned formation. This alternative usage may be of advantage for the fixing of certain

room or office wall furniture.

A third registration formation may be provided on the backing member and extends parallel to the first-mentioned formation, the first and third formations being spaced apart a distance corresponding to the spacing of the flanges of successive studs facing each other. The third registration formation may be formed in the second limb. The backing member may conveniently be produced from wood, which may be of laminated form.

The studs are provided with flanges having turned-over edges which in use present detents to engage one or more of the said formations to afford positive location of the backing member in relation to the studs.

The formations are conveniently in the form of grooves for registration with and reception of turned-over edges or lips of the stud flanges.

It is to be understood that the backing members are securely fastened to the studs by the use of approved fasteners, generally threaded fasteners.

According to a second aspect of the present invention there is provided a kit of parts including a plurality of backing members each produced according to the first aspect of the present invention.

According to a third aspect of the present invention there is provided a method of providing at least one backing member between two successive vertically erected U-shaped metal studs constituting studding in a wall structure, each said stud being installed with the web thereof secured to an end abutment and its front and back flanges forming the open mouth of the stud facing along the studding, with said two studs being oriented in a wall direction with the flanges of a first one of the studs being oriented toward a second one of the studs, each flange of each stud being turned-over to provide marginal lips in the form of detents, each backing member employed being made in accordance with the first aspect of the present invention, the method including the steps of:

- a- inserting the backing member in-between the two successive studs with the second limb abutting the external surface of the web of the second

stud and a free end of the first limb abutting the internal surface of the front flange of the first stud, the at least one formation registering with the detent of the front flange of the first stud; and

- 5 b- securing the backing member to both the first and second studs by the use of fasteners passing through the front flange of the first stud into the backing member and through the web of the second stud into the backing member.

Conveniently, the studding includes a third vertically erected U-shaped metal stud adjacent the second stud and being oriented in the opposite sense relative to the first and second studs with the flanges of the third studs being oriented toward the second stud, the at least one backing member being a first backing member and the at least one registration being a first registration adjacent the free end of the first limb thereof, a second backing member having a third registration formation being generally parallel to the first formation and located adjacent the second limb, the method further including the steps of:

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- c- inserting the second backing member in-between the second stud and the third stud with the free end of the first limb abutting the internal surface of the front flange of the second stud with the first formation registering with the detent of the front flange of the second stud and the second limb abutting the front flange of the third stud with the third formation registering with the detent of the front flange of the third stud; and
- 20

- d- securing the second backing member to both the second and third studs by the use of fasteners passing through the front flange of the second and third studs into the second backing member.
- 25

The invention also includes a wall structure produced by the method and incorporating a plurality of backing members secured to a plurality of studs, the combination constituting studding to which a plasterboard is secured.

Other objects and advantages of the present invention will become apparent from a careful reading of the detailed description provided herein, with appropriate reference to the accompanying drawings.

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BRIEF DESCRIPTION OF THE DRAWINGS

Further aspects and advantages of the present invention will become better understood with reference to the description in association with the following Figures, in which similar references used in different Figures denote similar components, wherein:

Figure 1 is a perspective front elevation of a section of studding in a wall structure showing backing members in accordance with an embodiment of the present invention emplaced in-between successive studs;

Figure 2 is a partially broken plan view of the studding shown in Figure 1; and

Figure 3 is a perspective front elevation of the embodiment of Figure 1.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

With reference to the annexed drawings the preferred embodiment of the present invention will be herein described for indicative purpose and by no means as of limitation.

Figure 1 illustrates a section 1 of studding 2 forming part of a wall structure (not shown), the studding 2 being comprised of a plurality of metal U-shaped studs 4 each having a web 6 with flanges 8 extending orthogonally therefrom with overturned edges or lips 10 essentially parallel to the web 6. Whilst the internal surface of the web 6 is substantially flat, its corresponding external surface 11 is slightly recessed in its central portion as at 12. The proximal stud 4a is typically secured to an end abutment 13 (Figure 2) with its surface 11 interfacing therewith and the open mouth of the stud facing along the length of the studding 2, the successive studs 4 being oriented as shown in the opposite sense, up to a last and final distal stud (not shown) of the wall construction. Backing members 20 extend between and are positively located in relation to the studs 4 in a manner to be described below.

Referring now to Figure 3, a backing member 20 is depicted and comprises a first limb 22 and a second limb 24 extending substantially orthogonally therefrom at one end of the first limb 22 to give a generally L-shaped

appearance. The first limb 22 has a first registration formation or groove 26 (or channel) extending across its width and opening into both edges and a second groove 28 extending lengthwise and intersecting the first groove 26 and a third groove 30 formed in the second limb, the first and third grooves being parallel one to the other or substantially so. The backing member 20 in this example of the present invention is of laminated form and is of the appropriate ply to comply with building codes, including its length dimension to substantially fit standard construction stud spacing(s) S (see Figure 2). The first and second limbs of the backing member 20 are typically securely attached to one another by staples or the like attachment, optionally with an adhesive there between. The backing member is conveniently produced from wood, which may be of laminated form of typically $\frac{3}{4}$ inch thick (as illustrated in Figures 2 and 3), and could preferably be pre-treated with a fire-retardant. The second limb 24 provides for a relatively wider surface to abut the web 6 of the adjacent stud 4 than the thickness of the first limb 22. Furthermore, the presence of the second limb 24 prevents a possible delamination, and therefore unreliable securing, that could occur if a screw would directly penetrates into the edge surface of the first limb 22, within the plane thereof, in between adjacent layers of the laminate.

As shown in Figure 3, typically, the overall length A of the backing member 20 is, in English units, an eighth of an inch ($\frac{1}{8}$ ") smaller than the stud spacing S, for example $15 \frac{7}{8}$ inches for a stud spacing S of 16 inches. The distances B, C, D of the center of the respective first 26, second 28 and third 30 grooves to the corresponding close edge of the backing member 20 are typically $1 \frac{1}{8}$ ", $\frac{5}{8}$ ", and $1 \frac{1}{8}$ ", respectively, while the typical groove width is about $\frac{1}{8}$ ". The width dimension of the backing member 20 may considerably vary depending of the intended use and expected load support. To this end, a substantially square shape backing member 20s is illustrated in Figure 2.

Although a different and less convenient installation order could be considered, the first backing member 20 to be installed is typically the leftmost one 20c, in the present case of Figure 1, simply for ease of installation. Then the following backing members 20 are successively installed the same way in-between successive studs 4.

For the last but one backing member 20b, the second limb 24 abuts the external surface 11 of the second stud 4b as can be seen in Figure 2, typically in register with the front flange 8 thereof, and is secured thereto by means of screws 32 or the like extending through the web 11 into the backing member 20b, whilst the
5 first limb 22 extends into the open mouth of the third stud 4c with the lip 10 of the front flange 8 interengaging and registering with the groove 26, with the end of the first limb 22 typically abutting the internal surface of the web 6. The first limb 22 receives a screw 32' or the like extending through the front flange 8.

In use with the proximal stud 4a being oriented as shown, the first backing
10 member 20a is finally (when other backing members 20b, 20c were previously installed) inserted in-between that first proximal stud 4a and the second, successive stud 4b in the studding 2. As can be seen more particularly in Figure 2, the third groove 30 is caused to register with the lip 10 of the front flange 8 of the stud 4a, the lip forming a detent for positively locating the
15 backing member 20a on the stud 4a. At the other end of the backing member 20a, similarly to the installation of previous backing members 20b, 20c, the first groove 26 is caused to engage the lip 10 of the front flange 8 of the second stud 4b with the end of the first limb 22 typically abutting the internal surface of the web 6 of stud 4b. The limbs 22 and 24 are secured to the respective studs 4a
20 and 4b by means of screws 32 or the like extending through the respective flanges 8 into the backing member 20a.

As it would be obvious to one skilled in the art, only the first backing member 20a could be installed between the first and second studs 4a, 4b, without having to previously install any other adjacent backing members 20.

25 Typically, at the end, all studs 4 are braced one to the other with the backing members 20 provided for wall furniture fixtures and fittings, placed on a plasterboard 40 (Figure 2) secured to the studding 2.

If it should be desired to provide a backing member 20v in a vertical orientation as can be seen in Figure 1 on the proximal stud 4a, the groove 28 is caused to
30 engage the lip 10 on the front flange 8 of the stud 4a and screws 32 are applied

through that flange into the backing member 20v to secure the latter in position as shown.

The backing member of the present invention is of such dimension as to be easily packaged and thus stored. Accordingly, the invention may be supplied in
5 kit form to the extent that suitable fasteners may be included thereby enabling a user to apply the backing member to pre-erected metal studding in a simple and swift manner, obviating the need for complicated strapping arrangements. The versatility of the invention in terms of its orientability in either the horizontal or the vertical mode is an added advantage.

10 Although the present invention has been described with a certain degree of particularity, it is to be understood that the disclosure has been made by way of example only and that the present invention is not limited to the features of the embodiments described and illustrated herein, but includes all variations and modifications within the scope of the invention as hereinafter claimed.

CLAIMS

The embodiments of the invention in which an exclusive property or privilege is claimed are defined as follows:

1. A backing member for installation in-between successive U-shaped
5 metal studs forming part of a wall structure, the backing member comprising a first bridging limb having at a free end thereof a first formation for registration with at least a flange of the metal stud, the first formation extending across a face of the first limb substantially parallel to and adjacent an edge of the free end of the first limb, and a second limb in the form of a bracing block extending
10 orthogonally from the first limb at a second end thereof opposite the first end and secured to the second end, the second limb being dimensioned to engage a web of the stud internally or externally thereof, the first and second limbs in use extending in-between successive metal studs and being securable thereto by fasteners, a second formation extending at least partially into a second face
15 of the second limb and being in a coplanar relationship to the face of the first limb.
2. A backing member according to Claim 1 wherein the second formation extends across said face of the first limb orthogonally with respect to the first
20 formation and in parallel with another edge of the first limb extending between the first and second ends thereof.
3. A backing member according to Claim 2 wherein a third formation extends entirely into the second face of the second limb, the third formation
25 being in substantial parallelism with the first formation on the first limb and in a coplanar relationship to the face of the first limb.

4. A backing member according to Claim 3 wherein each of said first and third formations is adapted for registration with an edge of said flange of the metal stud.
- 5 5. A backing member according to Claim 1 wherein the second formation extends entirely into the second face of the second limb and in substantial parallelism with the first formation on the first limb.
- 10 6. A backing member according to Claim 5 wherein the spacing between the first and second formations corresponds to the spacing of the flanges of the studs.
- 15 7. A backing member according to Claim 5 wherein each of said first and second formations is adapted for registration with an edge of said flange of the metal stud.
8. A backing member according to Claim 5 wherein the first and second formations extends into a marginal edge of the respective limb.
- 20 9. A backing member according to any one of Claims 1 to 8 wherein each one of the formations is in the form of a groove.
- 25 10. A backing member according to any one of Claims 1 to 9 wherein the first and second limbs provide a generally L-shaped appearance of the backing member with the second limb extending generally perpendicularly away from the face of the first limb.

11. A method of providing at least one backing member as defined in Claim 1 between two successive vertically erected U-shaped metal studs constituting studding in a wall structure, each said stud being installed with the web thereof secured to an end abutment and its front and back flanges forming the open mouth of the stud facing along the studding, with said two stud being oriented in a wall direction with the flanges of a first one of the studs being oriented toward a second one of the studs, each flange of each stud being turned-over to provide marginal lips in the form of detents, the method including the steps of:

- a- inserting the backing member in-between the two successive studs with the second limb abutting the external surface of the web of the second stud and a free end of the first limb abutting the internal surface of the front flange of the first stud, the at least one formation registering with the detent of the front flange of the first stud; and
- b- securing the backing member to both the first and second studs by the use of fasteners passing through the front flange of the first stud into the backing member and through the web of the second stud into the backing member.

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12. A method according to Claim 11 wherein the studding includes a third vertically erected U-shaped metal stud adjacent the second stud and being oriented in the opposite sense relative to the first and second studs with the flanges of the third studs being oriented toward the second stud, the at least one backing member being a first backing member and the at least one registration being a first registration adjacent the free end of the first limb thereof, a second backing member having a second registration formation being generally parallel to the first formation and located adjacent the second limb, the method further including the steps of:

- c- inserting the second backing member in-between the second stud and the third stud with the free end of the first limb abutting the internal

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surface of the front flange of the second stud with the first formation registering with the detent of the front flange of the second stud and the second limb abutting the front flange of the third stud with the second formation registering with the detent of the front flange of the third stud;
5 and

- d- securing the second backing member to both the second and third studs by the use of fasteners passing through the front flange of the second and third studs into the second backing member.

10 13. A method according to Claim 12 wherein the studding includes a plurality of studs suitably spaced apart to provide the structure of a wall, a plurality of backing members being secured thereto as aforesaid, and comprising a plurality of sheets of wallboard attached to the studding.

15 14. A wall structure constructed in accordance with the method as claimed in Claim 13.

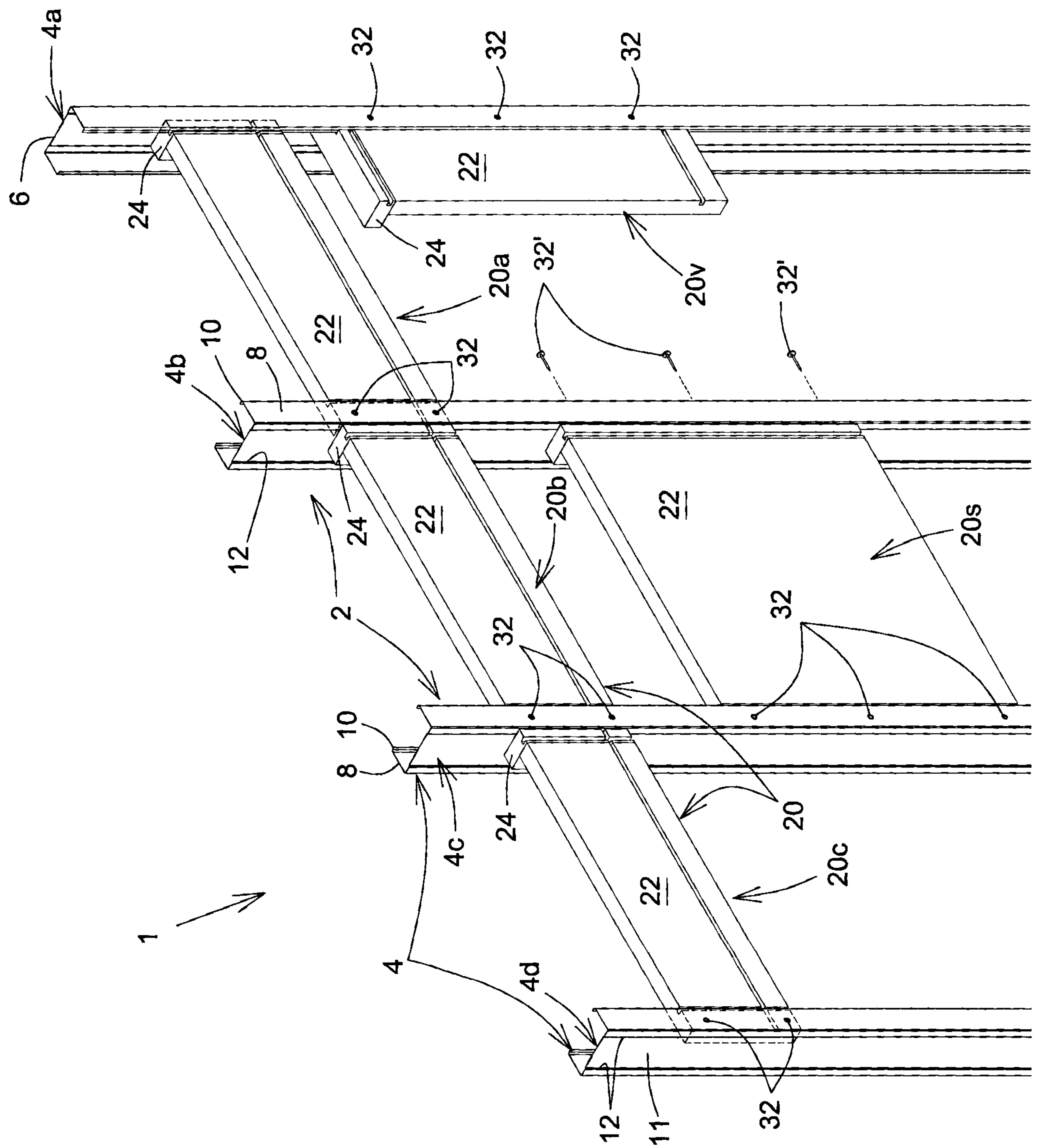


FIG. 1

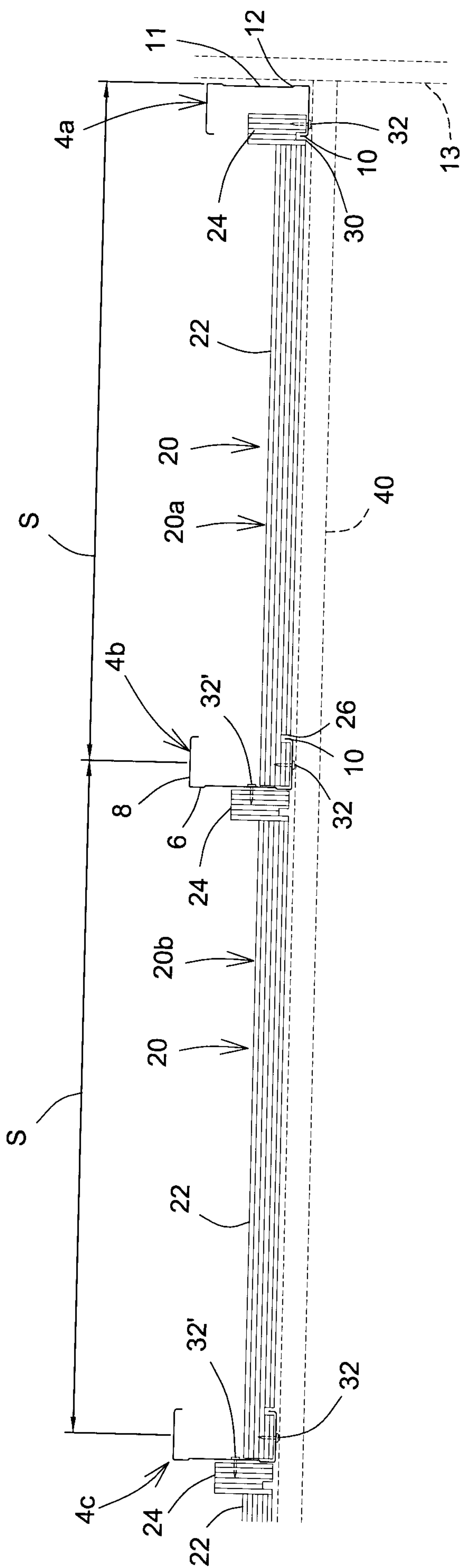


FIG.2

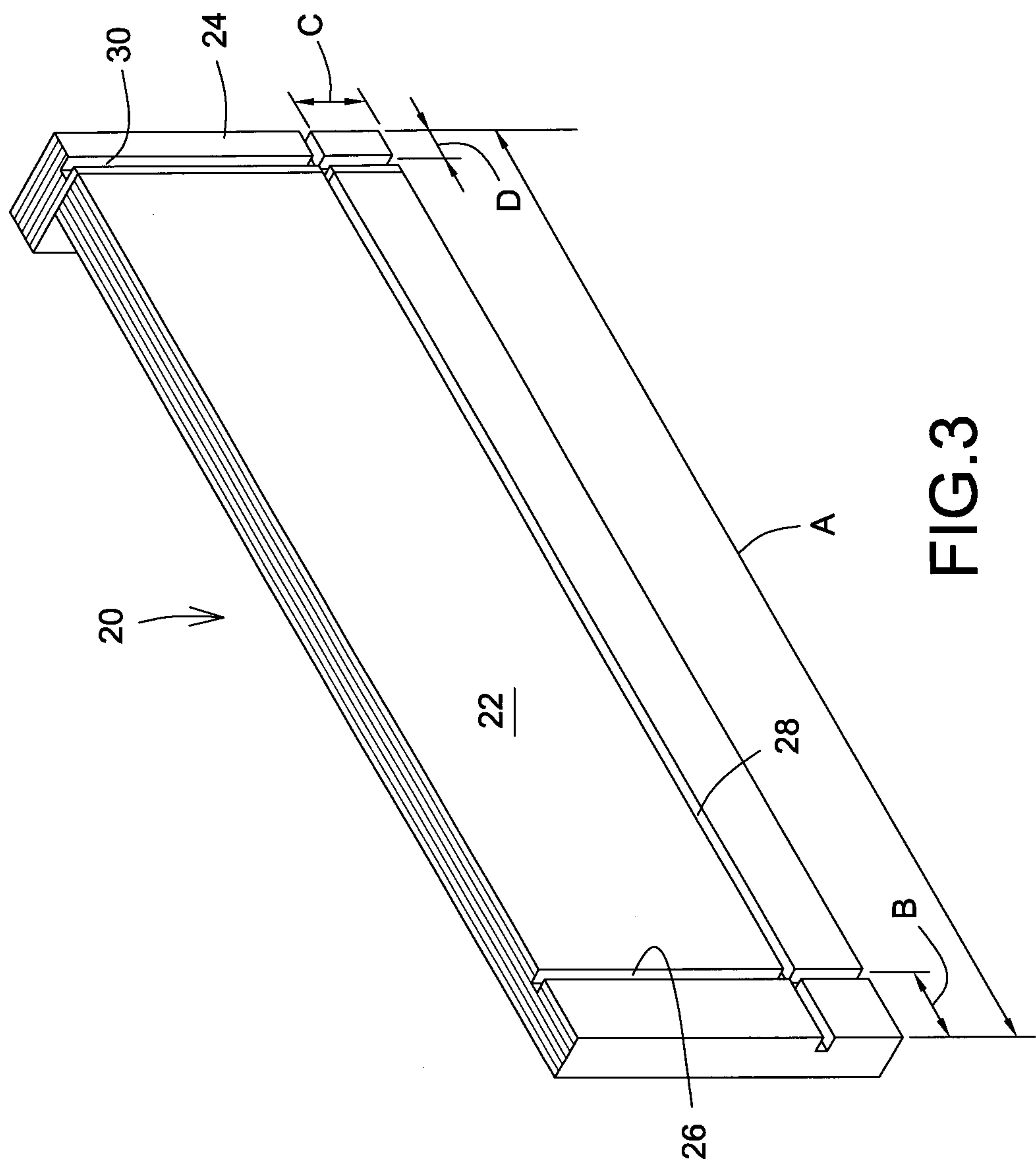


FIG. 3

