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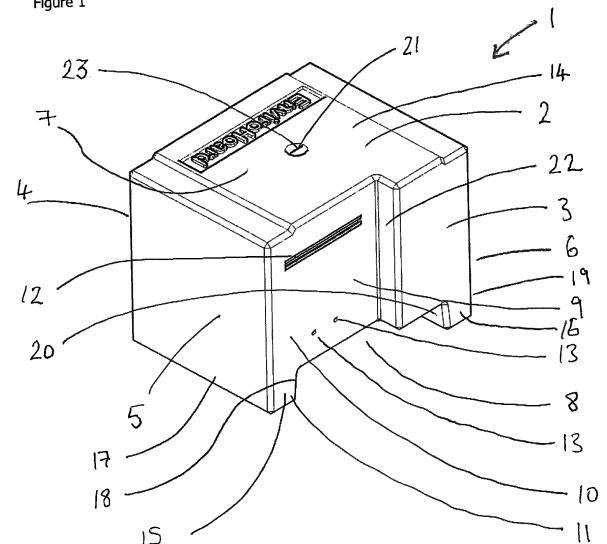
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(54) **BLOCK FOR SUPPORTING A HOARDING SYSTEM**

(57) A substantially cuboid block for supporting a hoarding system comprises a body having a length being a distance between a first set of two parallel planes at a front and back of the body, a width being a distance between a second set of two parallel planes defined at first and second sides of the body, each plane of the second set being substantially perpendicular to the planes of the first set, a height being a distance between a third set of two parallel planes defined at a top and bottom surfaces of the body, each plane of the third set being substantially perpendicular to the planes of the first and second sets, the body having a substantially cuboid void, an edge of the void corresponding with an edge between the first side and the front of the body thereby providing an indented front surface and an indented first side surface. An elongate channel is located in the top half of the indented front surface substantially parallel with the third set of two parallel planes. In use, the channel receives one or more fixings to secure a first post bracket. Two sockets are provided in the bottom half of the indented front surface below the channel and substantially equidistant from the channel. In use, the sockets receive fixings to secure a second post bracket. The post brackets enable a post to be fixed to the block and orientated vertically.

Figure 1



Description

[0001] The present invention relates to a block for supporting a hoarding system. In addition, the invention relates to a hoarding system for providing a temporary board fence erected around a building site.

[0002] In particular, this invention relates to a hoarding system which provides greater Climate Positive and Circular Economy benefits than traditional plywood hoarding which is generally scrapped after use under the standard current working procedures. The system of the invention comprises steel, concrete and recyclable uPVC. It can be reused multiple times to provide hoarding around multiple building sites.

Background of the Invention

[0003] To comply with Health & Safety regulations construction sites generally require the erection of perimeter hoarding around the site to act as a barrier between the construction zone and public areas. In addition, the hoarding provides a solid barrier to help prevent theft of plant and materials from the construction site.

[0004] A medium sized hoarding could have a perimeter of 300 linear metres in which if constructed using traditional timber and plywood hoarding would require an estimated number of nine 30 - 50-year-old trees cut down for its installation.

[0005] The most commonly used system in the UK is in-ground hoarding, this requires holes to be dug in the ground which then have timber posts inserted that are backfilled with wet concrete. After allowing the concrete to cure, timber horizontal rails are nailed/screwed across the posts and plywood panels are nailed/screwed to the rails. The plywood panels may carry visual information/branding via graphics and/or be painted in the client's corporate colour(s).

[0006] As an alternative to the in-ground timber system described above, the same type of system or a combination of steel and plywood hoarding systems are also known, where the posts are fixed to a concrete block which is the kentledge to hold the hoarding system in place rather than digging and concrete posts into the ground, these are known as no-dig systems.

[0007] At the end of a project the known hoarding is generally taken down with the materials being sent to be downcycled or to landfill.

[0008] In light of the problems discussed above, various proposals have been made, but there remains a need for an improved system which address one or more of the problems presented by prior art arrangements. In this regard, the present invention seeks to provide an alternative system which preferably addresses one or more of the problems presented by prior art arrangements. In particular, there is a need to provide a sustainable closed loop hoarding system which does not require any timber or plywood in its construction, and that can be repeatedly reused.

Summary of the Invention

[0009] In accordance with a first aspect of the present invention there is provided a substantially cuboid block for supporting a hoarding system, wherein the block comprises a body having a length being a distance between a first set of two parallel planes at a front and back of the body, a width being a distance between a second set of two parallel planes defined at first and second sides of the body, each plane of the second set being substantially perpendicular to the planes of the first set, a height being a distance between a third set of two parallel planes defined at a top and bottom surfaces of the body, each plane of the third set being substantially perpendicular to the planes of the first and second sets, the body having a substantially cuboid void, an edge of the void corresponding with an edge between the first side and the front of the body thereby providing an indented front surface and an indented first side surface, an elongate channel located in the indented front surface, the channel for receiving one or more fixing to secure a first post bracket and one or more sockets in the indented front surface, each socket for receiving a fixing to secure a second post bracket.

[0010] Preferably, the channel is located in the top half of the indented front surface. Preferably the channel is substantially parallel with the third set of two parallel planes.

[0011] Preferably, two sockets are located in the indented front surface. Preferably the sockets are located in the bottom half of the indented front surface. Preferably, the sockets are located below the channel. Preferably, the sockets are located substantially equidistant from the channel.

[0012] Preferably, the first post bracket is an upper post bracket. Preferably, the second post bracket is a lower post bracket.

[0013] Advantageously, the void provides space for a post to be releasably attached to the block while minimising overall length of the block and post combination. This is often critical on construction sites where space is at a premium.

[0014] Preferably, the distance between the first set of two parallel planes is about 700mm to about 740mm. More preferably, the distance between the first set of two parallel planes is about 720mm.

[0015] Preferably, the distance between the second set of two parallel planes is about 820mm to about 860mm. More preferably, the distance between the first set of two parallel planes is about 840mm.

[0016] Preferably, the distance between the third set of two parallel planes is about 660mm to about 700mm. More preferably, the distance between the third set of two parallel planes is about 680mm.

[0017] Preferably, the body has a first projection which extends from the top surface and second and third projections which extend from the bottom surface to provide legs, wherein the first projection is complementary with the second and third projections so that a first block has

a body having a top surface which is complementary with the bottom surface of the body of a second block thereby enabling blocks to be stacked in use. This provides the advantage of increased kentledge, for example at the ends and corners of a hoarding, where there may be increased wind load.

[0018] Preferably, the first projection has a length corresponding to the distance between the first set of parallel planes. Preferably, the second projection has a length corresponding to the distance between the indented front surface and the back of the body. Preferably, the third projection has a length corresponding to the distance between the first set of parallel planes.

[0019] Preferably, the second projection has a first surface coplanar with the first side of the body and a second surface wherein the width of the second projection corresponds to the distance from the first surface of the second projection to the second surface of the second projection.

[0020] Preferably, the third projection has a first surface coplanar with the second side of the body and a second surface wherein the width of the third projection corresponds to the distance from the first surface of the third projection to the second surface of the third projection.

[0021] Preferably, the first projection has a width which corresponds to the distance between the second surface of the second projection and the second surface of the third projection.

[0022] Preferably, the first, second and third projections each have a height which corresponds to each other. This provides the advantage that a first block of the invention can be stacked with a second block of the invention.

[0023] Preferably, the block has a mass of about 750kg to about 850kg. More preferably, the block has a mass of about 800kg.

[0024] Preferably, the block is not used in permanent construction of a building. The block does not form part of the finished construction of a building. The block is preferably used for temporary hoarding.

[0025] Furthermore, preferably, the block is not used as a piece of gym equipment or for weighing down camping tents or the like. It is specifically for use in the field of hoarding.

[0026] In accordance with a second aspect of the present invention there is provided a hoarding system which comprises a plurality of blocks according to the invention.

[0027] Preferably, the hoarding system comprises a plurality of connection brackets for connecting blocks together if they are stacked and / or when they are placed adjacent each other, for example to provide hoarding at a corner. Preferably, each connection bracket comprises a first flange and a second flange. Preferably, the first flange is substantially perpendicular to the second flange. Preferably, two holes are defined in the first flange, each hole for receiving a fixing, e.g., a bolt. Preferably, only

two holes are defined in the first flange. Preferably, two holes are defined in the second flange, each hole for receiving a fixing bolt. Preferably, only two holes are defined in the second flange. In use, fixings are placed through the holes and fixed to a block.

[0028] Preferably, the hoarding system comprises a plurality of first post brackets, each post bracket securable in a releasable manner to the channel in a block, wherein in use its position can be adjusted by sliding along the channel. In one embodiment, the first post bracket is securable to the channel in a block by one or more fixing. Preferably the fixing comprises a bolt.

[0029] Preferably, the first post bracket comprises a first plate for releasably attaching to the block, and second and third plates which project substantially parallel to each other from the first plate substantially perpendicular to the first plate. Preferably each plate is planar. Preferably, the first plate has at least one slot defined therein parallel to an edge between the first plate and the second or third plates. Preferably, the first plate has two slots defined therein and the second and the third plates project from the first plate between the slots. Preferably, at least the second plate has a slot defined therein arranged at about 45 degrees to the edge between the second plate and the first plate. Preferably, the third plate also has a slot defined therein arranged at about 45 degrees to the edge between the third plate and the first plate.

[0030] The arrangement of the slots provides the advantage that adjustment of the orientation of a post is possible enabling a post to be orientated vertically.

[0031] Preferably, the hoarding system comprises a plurality of second post brackets, each second post bracket being securable in a releasable matter to the sockets in a block. In one embodiment, the second post bracket is securable to the sockets in a block by one or more fixing. Preferably the fixing comprises a bolt.

[0032] Preferably, the second post bracket comprises a first plate for releasably attaching to the block, and second and third plates which project substantially parallel to each other from the first plate perpendicular to the first plate. Preferably, the first plate has at least one slot defined therein. Preferably, two slots are defined in the first plate and the second and the third plates project from the first plate between the slots. Preferably, the slots are frusto annular. Alternatively, preferably, the slots are linear and located between upper and lower sides of the first plate. Preferably, the slots are perpendicular to an edge between the first plate and the second or third plates. Preferably, at least one of the slots has adjoining additional perpendicular slots. Advantageously, this enables the first plate to be releasably attached to a block and adjusted to enable rotation of the bracket relative to the block before securing the bracket to a block. Preferably, the second and third plates have a plurality of holes defined therein for receiving a bolt between the second and third plates thereby enabling the end of a post to be fixed between the second and third plates. Preferably,

the end of the post has an open slot, which receives the bolt between the second and third plates of the second post bracket. This provides the advantage that in use a post can be engaged with a bolt between the second and third plates and it can be positioned by a single person.

[0033] The arrangement of the slots defined in the first plate and the holes defined in the second and third plates provides the advantage that adjustment of the orientation of a post is possible enabling a post to be orientated vertically.

[0034] In the event that blocks are stacked, preferably, a second post bracket is fixed to only the lower block in a stack. In addition, in the event that blocks are stacked, preferably, a first post bracket is fixed to each block except the lower block in a stack.

[0035] In an embodiment, preferably, the second post bracket is extended and defines at least one additional slot. More preferably, it defines at least two additional slots. This provides the advantage of allowing greater horizontal adjustment of a post. This is particularly advantageous, because when mesh panels are joined to the posts, the posts must be adjusted so that they are in the exact position to allow the correct fixing of the mesh panels.

[0036] In an embodiment, preferably a rear mounted post bracket is provided. Advantageously, the rear mounted post bracket allows an additional support post to be mounted to the rear of the block. Advantageously, this allows hoarding to form a corner and turn on a shorter return and would otherwise require at least two blocks to form a corner.

[0037] Preferably, the rear mounted post bracket allows the same adjustment of the post as brackets fixed to the front of the block.

[0038] Preferably, upper and lower brackets are fixed to the rear mounted post bracket.

[0039] Preferably, it is these components that a post can be fixed to.

[0040] Advantageously, a rear mounted post bracket also enables the use of a wire mesh fence system. Advantageously, the mesh allows wind to pass therethrough so fewer blocks are required for support.

[0041] Preferably, the hoarding system comprises a plurality of posts, each post having first and second ends wherein adjacent the first end of each post is adapted to be releasably secured to a first post bracket and a second post bracket.

[0042] Preferably, a post has a slot defined in its first end. Preferably, the slot is coaxial with the post and the slot is open at the end of the post.

[0043] Preferably, each post has a height of about 2400mm.

[0044] Preferably, each post comprises rail supports, which are preferably U shaped for receiving a rail. Preferably, in use, a rail support is capable of at least partly surrounding the bottom and sides of a rail. Preferably, the rail supports are provided in groups wherein each group is spaced apart between the first and second ends

of each post. Preferably, each post comprises two, three or four groups. More preferably, each post comprises four groups. Preferably, each group comprises two, three or four rail supports. More preferably, each group comprises four rail supports. In use, this provides the advantage of enabling the rails to be mounted in the rail supports in such a way so they are horizontally level to the ground.

[0045] In an embodiment, preferably, a post defines pre-threaded holes at the front of the post. Advantageously, this allows a range of wire mesh fencing panels to be fixed to the post. Preferably, they are fixed to the post with security head screws.

[0046] Preferably, the hoarding system comprises a plurality of rails, wherein each rail is suitable to be inserted in the rail supports. In use, a rail is supported between a number of posts by a number of rail supports. In use, at least three horizontal rails are inserted into the rail supports of a post without any mechanical fixing into the rail supports. This provides the advantage of enabling the posts to allow releasable fixing of the panels.

[0047] Preferably, the hoarding system comprises first rails having a length of about 1300mm and/or second rails having a length of about 1500mm and/or third rails having a length of about 2500mm.

[0048] Preferably, the hoarding system comprises rail joiners for joining rails together, for example at awkward corners. Preferably, the rail joiners are machined of steel. Preferably, the rail joiners are bolted to the rails. Advantageously, the rail joiners make joins between rails much more rigid and they tie hoarding together. Advantageously, they are not required in a corner of hoarding where the hoarding includes a run of hoarding of more than 3m in each direction from the corner.

[0049] Preferably, a rail joiner comprises a generally planar flange defining a generally arcuate slot for receiving a fixing adjacent one side of the flange and a generally circular aperture for receiving a second fixing adjacent an opposing side of the flange. Preferably, the arcuate slot is defined by an arc, wherein a tangent to the arc midway between first and second ends of the slot is parallel to a side of the flange. Preferably, the generally circular aperture is defined in the flange adjacent a corner of the flange.

[0050] Preferably, the rail joiner is defined by a generally octagonal flange.

[0051] Preferably, the hoarding system comprises a plurality of panels for attachment to the rails. Preferably the panels are releasably attachable to rails. Preferably, the panels are solid or of mesh. Preferably, the panels are solid uPVC or of steel mesh. Preferably, the panels are of recyclable plastics, e.g. uPVC.

[0052] Preferably, the hoarding system comprises clips for releasably fixing the panels to the rails. Preferably, the clips clamp ribbed sections on the rear of a panel at both edges and (if needed) in the middle.

[0053] Preferably, the hoarding system comprises a plurality of extension posts for attachment to the posts.

This provides the advantage of enabling the overall height of the hoarding system to be increased where necessary.

[0054] Preferably, the hoarding system comprises first extension posts having a length of about 1200mm and/or second extension posts having a length of about 2200mm. Preferably, extension posts having a length of about 1200mm extend a post about 600mm. Preferably, extension posts having a length of about 2200mm extend a post about 1200mm.

[0055] In one embodiment, preferably, each post defines a hole or slot so that two posts can be fixed together, for example by bolting the posts together. This provides the advantage that two posts can also be used together as a post and extension post. Advantageously, this enables hoarding to be up to about 3.6m high. Advantageously, this simple design change means that separate extension posts, which can be costly, are not required and it avoids the possibility of dedicated extension posts being manufactured and being unused.

[0056] Preferably, the hoarding system comprises a cranked lighting bracket for fixing to the second end of a post. In use, this provides the advantage of enabling a light fitting to be located above a hoarding panel.

[0057] Preferably, the hoarding system comprises a plurality of cable support brackets. Preferably, a cable support bracket is fixed to a post opposite the rails supports. In use, the cable support brackets provide the advantage of enabling cables to be securely and safely held along the back of the hoarding.

[0058] Preferably, the hoarding system comprises a range of trims which may be releasably attached to the panels. The trims provide the advantage of covering any gaps vertically and / or horizontally between hoarding panels. In addition, where the hoarding system is used on uneven ground, the trims provide the advantage of covering any gaps between the ground and hoarding panels.

[0059] The hoarding system of the invention provides the advantage of enabling images, e.g. full colour visuals to be electronically printed and applied to the panels for branding and messaging purposes.

Brief Description of the Drawings

[0060] The invention will now be further described with reference to the accompanying drawings in which:

Figure 1 shows a perspective view of a block of the invention;

Figure 2 shows an alternative perspective view of a block of the invention;

Figure 3 shows a front view of two blocks of the invention stacked together;

Figure 4 shows a perspective view of a connection

bracket of a hoarding system of the invention;

Figure 5 shows perspective views of a first post bracket of a hoarding system of the invention;

Figure 6 shows perspective views of a second post bracket of a hoarding system of the invention;

Figure 7 shows a perspective view of a post of a hoarding system of the invention;

Figure 8 shows top, side and end views of a rail of a hoarding system of the invention;

Figure 9 shows a perspective view of a rail support of a hoarding system of the invention;

Figure 10 shows a perspective view of an extension post of a hoarding system of the invention; and

Figure 11 shows a perspective view of an alternative extension post of a hoarding system of the invention.

Detailed Description of the Invention

[0061] It will be appreciated that aspects, embodiments and preferred features of the invention have been described herein in a way that allows the specification to be written in a clear and concise way. However, unless circumstances clearly dictate otherwise, aspects, embodiments and preferred features can be variously combined or separated in accordance with the invention. Thus, preferably, the invention provides a device having features of a combination of two or more, three or more, or four or more of the aspects described herein. In a preferred embodiment, a device in accordance with the invention comprises all aspects of the invention.

[0062] Within the context of this specification, the word "about" means plus or minus 20%, more preferably plus or minus 10%, even more preferably plus or minus 5%, most preferably plus or minus 2%.

[0063] Within the context of this specification, the word "substantially" means preferably at least 90%, more preferably 95%, even more preferably 98%, most preferably 99%.

[0064] Within the context of this specification, the word "comprises" means "includes, among other things" and should not be construed to mean "consists of only".

[0065] With reference to figures 1 to 3, the invention provides a block (1) of concrete for supporting a hoarding system, wherein in block is substantially cuboid. The block (1) comprises a body (2) having a length being a distance between a first set of two parallel planes at a front (3) and back (4) of the body (2), a width being a distance between a second set of two parallel planes defined at first and second sides (5, 6) of the body, each plane of the second set being substantially perpendicular to the planes of the first set, a height being a distance

between a third set of two parallel planes defined at a top and bottom surfaces (7, 8) of the body, each plane of the third set being substantially perpendicular to the planes of the first and second sets. The body (2) has a substantially cuboid void (9), an edge of the void corresponding with an edge between the first side and the front of the body thereby providing an indented front surface (10) and an indented first side surface (22). An elongate channel (12) is located in the top half of the indented front surface (10) substantially parallel with the third set of two parallel planes. In use, the channel (12) receives one or more fixings to secure a first post bracket (30). Two sockets (13) are located in the bottom half of the indented front surface (10) below the channel (12) and substantially equidistant from the channel (12). In use, the sockets (13) receive fixings to secure a second post bracket (40).

[0066] The distance between the first set of two parallel planes is about 720mm. The distance between the second set of two parallel planes is about 840mm. The distance between the third set of two parallel planes is about 680mm.

[0067] The body (2) has a first projection (14) which extends from the top surface (7) and second and third projections (15, 16) which extend from the bottom surface (8) to provide legs (11), wherein the first projection (14) is complementary with the second and third projections (15, 16) so that a first block (1) has a body (2) having a top surface (7) which is complementary with the bottom surface (8) of the body (2) of a second block (1) thereby enabling blocks (1) to be stacked in use.

[0068] The first projection (14) has a length corresponding to the distance between the first set of parallel planes. The second projection (15) has a length corresponding to the distance between the indented front surface (10) and the back (4) of the body (2). The third projection (16) has a length corresponding to the distance between the first set of parallel planes.

[0069] The second projection (15) has a first surface (17) coplanar with the first side (5) of the body (2) and a second surface (18) wherein the width of the second projection (15) corresponds to the distance from the first surface (17) of the second projection (15) to the second surface (18) of the second projection (15).

[0070] The third projection (16) has a first surface (19) coplanar with the second side (6) of the body (2) and a second surface (20) wherein the width of the third projection (16) corresponds to the distance from the first surface (19) of the third projection (16) to the second surface (20) of the third projection (16).

[0071] The first projection (14) has a width which corresponds to the distance between the second surface (18) of the second projection (15) and the second surface (20) of the third projection (16).

[0072] The first, second and third projections (14, 15, 16) each have a height which corresponds to each other.

[0073] By their very nature a construction site would not have a suitable concrete foundation along the re-

quired perimeter hoarding line, therefore a suitably sized and weighted concrete block (1) is required to provide a free-standing support for a hoarding system. The concrete block (1) has been designed as a bespoke component of a hoarding system of the invention. It has the front left side corner cut out to allow post fixing making it unique to the system design.

[0074] The minimum concrete strength at 28 days is about 50N/mm² to comply with current CE requirements. The concrete is Class A1 Fire Resistant in accordance with clause 4.3.4.4 of EN 13369.

[0075] The concrete block (1) can be cast using cement free products which provides a lower carbon solution to standard concrete.

[0076] To comply with current lifting procedures the concrete block (1) has a semi-spherical recess (21) in its gravitational centre for a cast-in pin anchor (23), this allows the block (1) to be lifted and manoeuvred using a certified 2500kg lifting clutch which connects to the cast-in pin anchor (23).

[0077] In addition, the block (1) has legs (11) at the bottom to allow for a pump truck or fork lift tines so that the block (1) can be lifted from below as some construction sites do not allow lifting from above for these applications.

[0078] Each block (1) is branded on the top with the name of the system which is made from the casting mould making the block (1) unique and easily identifiable.

[0079] The block (1) has a mass of about 800kg.

[0080] Referring to Figure 4, a connection bracket (25) is used to connect blocks (1) together if they are stacked or when they are placed adjacent each other, for example to provide hoarding at a corner. Each connection bracket (25) comprises a first flange (26) and a second flange (27) perpendicular to the first flange. Two holes (28) are defined in the first flange (26) and two holes (29) are defined in the second flange (27), each hole for receiving a fixing, ag a bolt. In use, fixings are placed through the holes (28, 29) and fixed to a block (1).

[0081] Referring to Figure 5, the block (1) forms part of a hoarding system which comprises a plurality of first and second steel post brackets (30, 40), each first post bracket (30) is securable in a releasable manner to the channel (12) in a block (1), wherein in use its position can be adjusted by sliding along the channel (12). The first post bracket (30) is securable to the channel (12) in a block (1) by two T-bolts. In this regard, a T shaped end of a T-bolt is placed in the channel (12) and turned to secure it in the channel (12).

[0082] The first post bracket (30) comprises a first plate (31) for releasably attaching to the block (1), and second and third plates (32, 33) which project from the first plate (31) perpendicular to the first plate (31), the first plate (31) having a slot (34) parallel to an edge (35) formed between the first plate (31) and the second or third plate (32, 33). The first plate (31) has two slots (34) parallel to edges (35) between the first plate (31) and the second and third plates (32, 33). The second and the third plates

(32, 33) project from the first plate (31) between the slots (34). The second and third plates (32, 33) have slots (36, 37) therein arranged at 45 degrees to the edge (35) between the second and third plates (32, 33) and the first plate (31).

[0083] Referring to Figure 6, each second post bracket (40) is securable in a releasable manner to each socket (13) in a block (1) by two bolts.

[0084] Each second post bracket (40) comprises a first plate (41) for releasably attaching to the block (1), and second and third plates (42, 43) which project from the first plate (41) perpendicular to the first plate (41), the first plate (41) having two frusto-annular slots (44) adjacent edges of the first plate (41). The second and third plates (42, 43) each have three holes (45) defined therein for receiving a bolt between the second and third plates (42, 43) thereby enabling the end of a post (50) to be fixed between the second and third plates (42, 43).

[0085] Referring to Figure 7, the hoarding system comprises a plurality of steel posts (50), each post (50) having first and second ends (51, 52) wherein adjacent the first end (51) of each post (50) is adapted to be releasably secured to a first post bracket (30) and a second post bracket (40).

[0086] Referring to Figure 9, each post (50) comprises U shaped rail supports (60). The rail supports (60) are provided in four groups (61) wherein each group is spaced apart between the first and second ends (51, 52) of each post (50). Each group comprises four rail supports (60).

[0087] Referring to Figure 8, the hoarding system comprises a plurality of rails (70), wherein each rail (70) is suitable to be inserted in the rail supports (60). In use, a rail (70) is supported between a number of posts (50) by a number of rail supports (60). In use, at least three horizontal rails (70) are inserted into the rail supports (60) of a post (50) without any mechanical fixing into the rail supports (60). The hoarding system comprises first rails (70) having a length of about 1300mm and second rails having a length of about 1500mm and third rails having a length of about 2500mm.

[0088] The hoarding system comprises a plurality of solid uPVC or steel mesh panels (not shown) which are releasably attachable to rails (70).

[0089] The hoarding system comprises clips (not shown) for releasably fixing the panels to the rails (70). The clips clamp ribbed sections on the rear of a panel at both edges and in the middle if required.

[0090] Referring to Figures 10 and 11, the hoarding system comprises a plurality of extension posts (81, 82) for attachment to the posts (50). The hoarding system comprises first extension posts (81) having a length of about 1200mm and second extension posts (82) having a length of about 2200mm. In use, the first extension post (81) can be bolted to a post (50) to provide a combination of a post (50) and extension post (81) having an overall height of about 3000mm. In use, the second extension post (82) can be bolted to a post (50) to provide a com-

bination of a post (50) and extension post (82) having an overall height of about 3600mm.

[0091] The hoarding system comprises a cranked lighting bracket for fixing to the second end (52) of a post (50).

[0092] The hoarding system comprises a plurality of cable support brackets (not shown), wherein a cable support bracket is fixed to a post opposite the rails supports (60).

[0093] The hoarding system comprises a range of trims (not shown) which may be releasably attached to the panels (now shown).

[0094] Each post bracket (30, 40) is fixed to the concrete block (1) by bolts and the steel post (50) which is bolted to the brackets (30, 40) using M16 bolts, washers and nuts.

[0095] A releasable rectangular galvanised box steel post (50) with multiple welded U rail supports (60) is used for connecting horizontal steel rails (70). These form the primary support for the hoarding system.

[0096] Each post (50) has been designed in such a way that it can be connected to more than one block (1) if they are required to be stacked on top of another as shown in Figure 3.

[0097] Each post (50) has a plurality of holes (53) defined therein so that the posts (50) can be extended to provide a solid hoarding over the standard 2.44m high or for mesh panels to be added for increased security but without associated increased wind loading.

[0098] At the top of each post (50) there is provision for a connection for a lighting bracket to be provided.

[0099] On the rear of each post (50) there is provision for a number of cable support brackets to be provided.

[0100] The welded U shaped rail supports (60) at the front of each post (50) have been set-out to take into account uneven ground levels, additional brackets (60) ensure the horizontal rails (70) can be installed level.

[0101] The U shaped rail supports (60) each have a hole (62) defined therein at the front to allow for fixing steel mesh panels in lieu of solid hoarding; in this case horizontal steel rails (70) are not required.

[0102] Steel rails (70) can be supported by the rail supports (60) and provide the connection point between the steel posts (50) and the uPVC hoarding panels. They are fabricated using 40mm x 40mm galvanised boxed steel and simply slot into the welded U shaped rail supports (60) on the steel posts (50) without any mechanical fixing and can be removed by lifting upwards out of the U shaped rail supports (60).

[0103] Each steel rail (70) has holes (71) defined therein at each end to allow for fixing to pedestrian gate frames where required.

[0104] Three rails (70) are used as standard with each post (50) however if required four rails (70) can be installed.

[0105] At ends and corners of the hoarding each rail (70) can be slid backwards inside the U brackets (60) so not to protrude the hoarding line.

[0106] Shorter steel rails (70) are provided where elevations are under 3m.

[0107] Clips of electroplated metal are included to connect the recyclable uPVC panels to the horizontal galvanised steel rails (70) every 0.5m.

[0108] Each clip has four arms with flat plates that pull against the ribbed sections on the uPVC panels when the bolt is tightened against the back of the horizontal steel rail.

[0109] The uPVC panels are typically 2400mm long x 500mm wide x 35mm deep at three points and 10mm between the structural ribs of each panel.

[0110] White panels are extruded from a mixture of post-production and post-consumer waste uPVC, coloured panels are made from virgin uPVC - both recycled and virgin can be recycled numerous times at the end of the life.

[0111] The panels are extruded with one male edge and one female allowing them to be joined together and connected to together and to the horizontal steel rail (70).

[0112] The front face of the panels is flat so when joined together the system provides a seamlessly flat face that vinyl graphics can be applied to directly without any interruption of vertical joints that is known in other plywood hoarding systems.

[0113] Being made from uPVC the panels offer far greater life expectancy than plywood hoarding. A life of 10 years is expected when compared to 2-3 years for even a higher quality standard class 2 plywood that is traditionally used for external plywood hoarding systems.

[0114] Panels can be extruded in lengths of up to about 7m in length in one piece meaning fewer joints are required.

[0115] Panels can be extruded in any RAL colour to meet corporate branding requirements.

[0116] Advantageously, a standard 2400mm x 500mm panel weighs 5.7kg compared to 25kg for a typical 18mm 2440mm x 1220mm plywood panel. This facilitates installation as well as transportation.

[0117] In addition, advantageously, panels can be processed back into pellets ready to be reused for extruding back into new panels.

[0118] Optional horizontal top and bottom releasable uPVC trims can be added to the hoarding system by inserting the panels into the trim. These trims provide the advantage of hiding any differences in ground levels as well as providing an attractive finish to the top and bottom of the hoarding.

[0119] Rigid and flexi vertical corner trims can be added into the hoarding where required to provide an attractive finish.

[0120] All trims can be reused multiple times and are recyclable.

[0121] The hoarding system in accordance with the invention removes the need to use timber or plywood in its construction. These valuable resources are a poor use of material for construction site hoarding that are generally installed for 1-5 years. For comparison, it could of

took 30-50 years to grow the trees required.

[0122] The invention eliminates the potential danger of digging holes into the ground and avoids the need for wet concrete which delays the installation of hoarding often resulting in the requirement for return visits.

[0123] The hoarding system of the invention is LCA verified as 'Net Zero Carbon' and offers Climate Positive benefits such as tree planting and carbon offsetting against every metre installed.

[0124] The hoarding system of the invention provides the advantage that no painting on, or off site is required which eliminates any COSHH risks (Control of Substances Hazardous to Health) and unlike plywood hoarding it requires no ongoing costly maintenance.

[0125] When the hoarding system of the invention is no longer required it can be easily dismantled and transported by vehicle to a different project or returned to be stored for future use without any materials going to landfill.

[0126] The hoarding system of the invention provides the advantage that improved manual handling is gained as a standard 2400mm x 500mm panel of the invention weighs 5.7kg compared to 25kg for a typical 2440mm x 1220mm 18mm plywood panel.

[0127] The above described embodiments have been given by way of example only, and the skilled reader will naturally appreciate that many variations could be made thereto without departing from the scope of the invention.

Claims

1. A block for supporting a hoarding system, wherein the block is substantially cuboid and comprises a body having a length being a distance between a first set of two parallel planes at a front and back of the body, a width being a distance between a second set of two parallel planes defined at first and second sides of the body, each plane of the second set being substantially perpendicular to the planes of the first set, a height being a distance between a third set of two parallel planes defined at a top and bottom surfaces of the body, each plane of the third set being substantially perpendicular to the planes of the first and second sets, the body having a substantially cuboid void, an edge of the void corresponding with an edge between the first side and the front of the body thereby providing an indented front surface and an indented first side surface, an elongate channel located in the indented front surface, the channel for receiving one or more fixing to secure a first post bracket and one or more sockets in the indented front surface, each socket for receiving a fixing to secure a second post bracket.
2. The block according to claim 1, wherein the channel is located in the top half of the indented front surface substantially parallel with the third set of two parallel

- planes.
3. The block according to claim 1 or claim 2, wherein two sockets are located in the bottom half of the indented front surface below the channel. 5
 4. The block according to any one of the preceding claims, wherein the body has a first projection which extends from the top surface and second and third projections which extend from the bottom surface to provide legs, wherein the first projection is complementary with the second and third projections so that a first block has a body having a top surface which is complementary with the bottom surface of the body of a second block thereby enabling blocks to be stacked in use; optionally wherein the first projection has a length corresponding to the distance between the first set of parallel planes, the second projection has a length corresponding to the distance between the indented front surface and the back of the body, and the third projection has a length corresponding to the distance between the first set of parallel planes. 10
 5. The block according to claim 4, wherein the second projection has a first surface coplanar with the first side of the body and a second surface wherein the width of the second projection corresponds to the distance from the first surface of the second projection to the second surface of the second projection, third projection has a first surface coplanar with the second side of the body and a second surface wherein the width of the third projection corresponds to the distance from the first surface of the third projection to the second surface of the third projection, and the first projection has a width which corresponds to the distance between the second surface of the second projection and the second surface of the third projection. 15
 6. The block according to any one of claims 4 to 5, wherein the first, second and third projections each have a height which corresponds to each other. 20
 7. A hoarding system which comprises a plurality of blocks according to any one of claims 1 to 6; optionally wherein the hoarding system comprises a plurality of connection brackets for connecting blocks together, each connection bracket comprising a first flange and a second flange substantially perpendicular to the first flange. 25
 8. The hoarding system of claim 7, wherein the hoarding system comprises a plurality of first post brackets, each post bracket securable in a releasable manner to the channel in a block by one or more fixings. 30
 9. The hoarding system of claim 8, wherein the first post bracket comprises a first plate for releasably attaching to the block, and second and third plates which project from the first plate substantially perpendicular to the first plate, the first plate having a slot substantially parallel to an edge formed between the first plate, the second and third plates each having a slot defined therein arranged at about 45 degrees to the edge between the second or third plates and the first plate. 35
 10. The hoarding system of any one of claims 7 to 9, wherein the hoarding system comprises a plurality of second post brackets, each second post bracket being securable in a releasable manner to the sockets in a block by one or more fixings; optionally wherein the second post bracket comprises a first plate for releasably attaching to the block, and second and third plates which project from the first plate perpendicular to the first plate, the first plate having two frusto-annular slots, the second and the third plates projecting from the first plate between the slots, the second and third plates having a plurality of holes defined therein for receiving a bolt between the second and third plates thereby enabling the end of a post to be fixed between the second and third plates. 40
 11. The hoarding system of any one of claims 7 to 10, wherein the hoarding system comprises a plurality of posts, each post having first and second ends wherein adjacent the first end of each post is adapted to be releasably secured to a first post bracket and a second post bracket; optionally wherein each post comprises U shaped rail supports provided in groups wherein each group is spaced apart between the first and second ends of each post; optionally wherein the hoarding system comprises a plurality of rails, wherein each rail fits into a U shaped rail support; optionally wherein the hoarding system comprises a plurality of panels which are releasably attachable to the rails; optionally wherein the hoarding system comprises a plurality of clips for releasably fixing the panels to the rails. 45
 12. The hoarding system of claim 11, wherein the hoarding system comprises a plurality of extension posts for attachment to the posts; optionally wherein the hoarding system comprises first extension posts having a length of about 1200mm and/or second extension posts having a length of about 2200mm. 50
 13. The hoarding system according to any one of claims 11 to 12, wherein the hoarding system comprises a cranked lighting bracket for fixing to the second end of a post. 55
 14. The hoarding system according to any one of claims 11 to 13, wherein the hoarding system comprises a

plurality of cable support brackets, wherein each cable support bracket is fixed to a post.

15. The hoarding system according to any one of claims 11 to 14, wherein the hoarding system comprises a range of trims which may be releasably attached to the panels.

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Figure 1

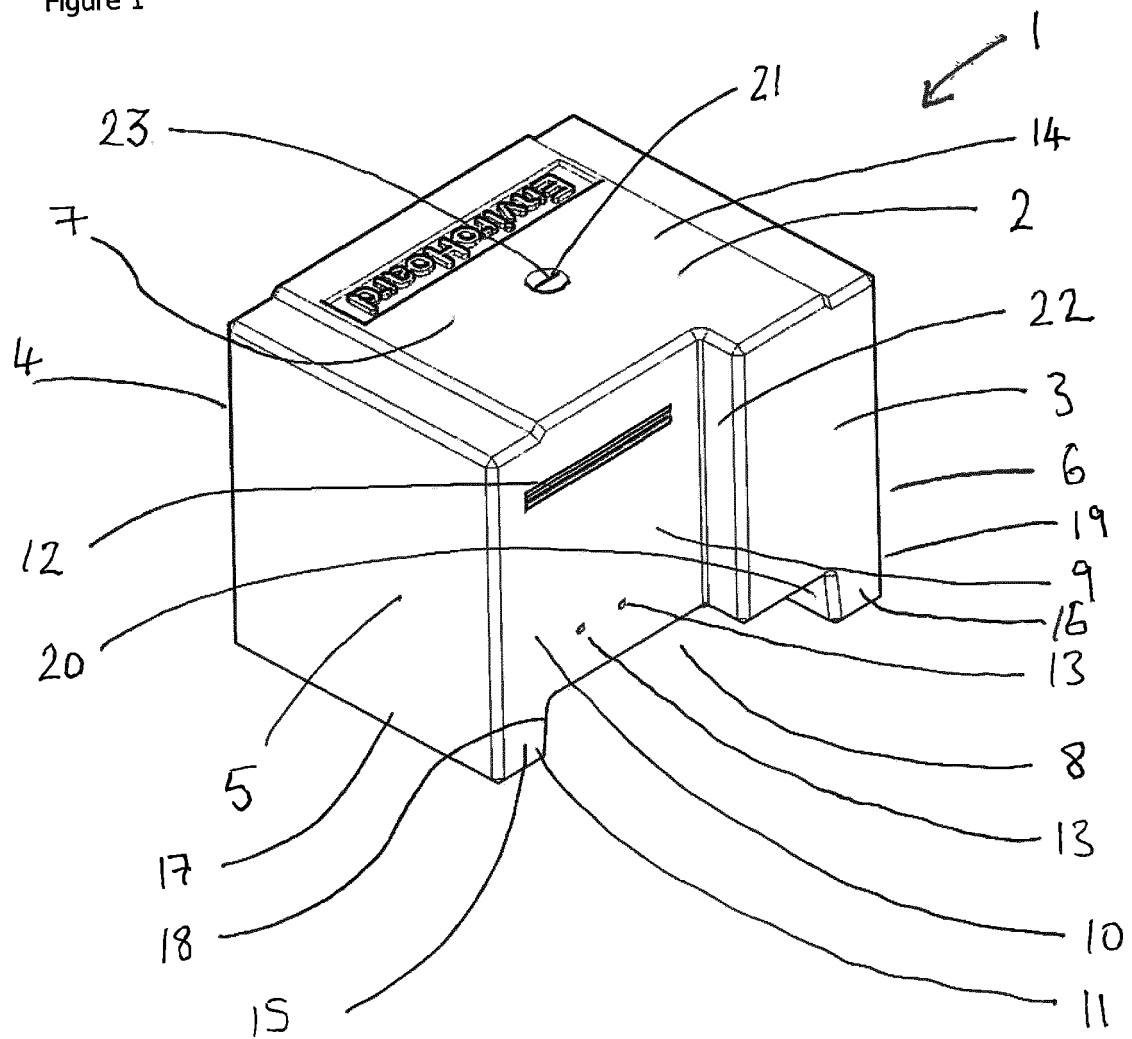


Figure 2

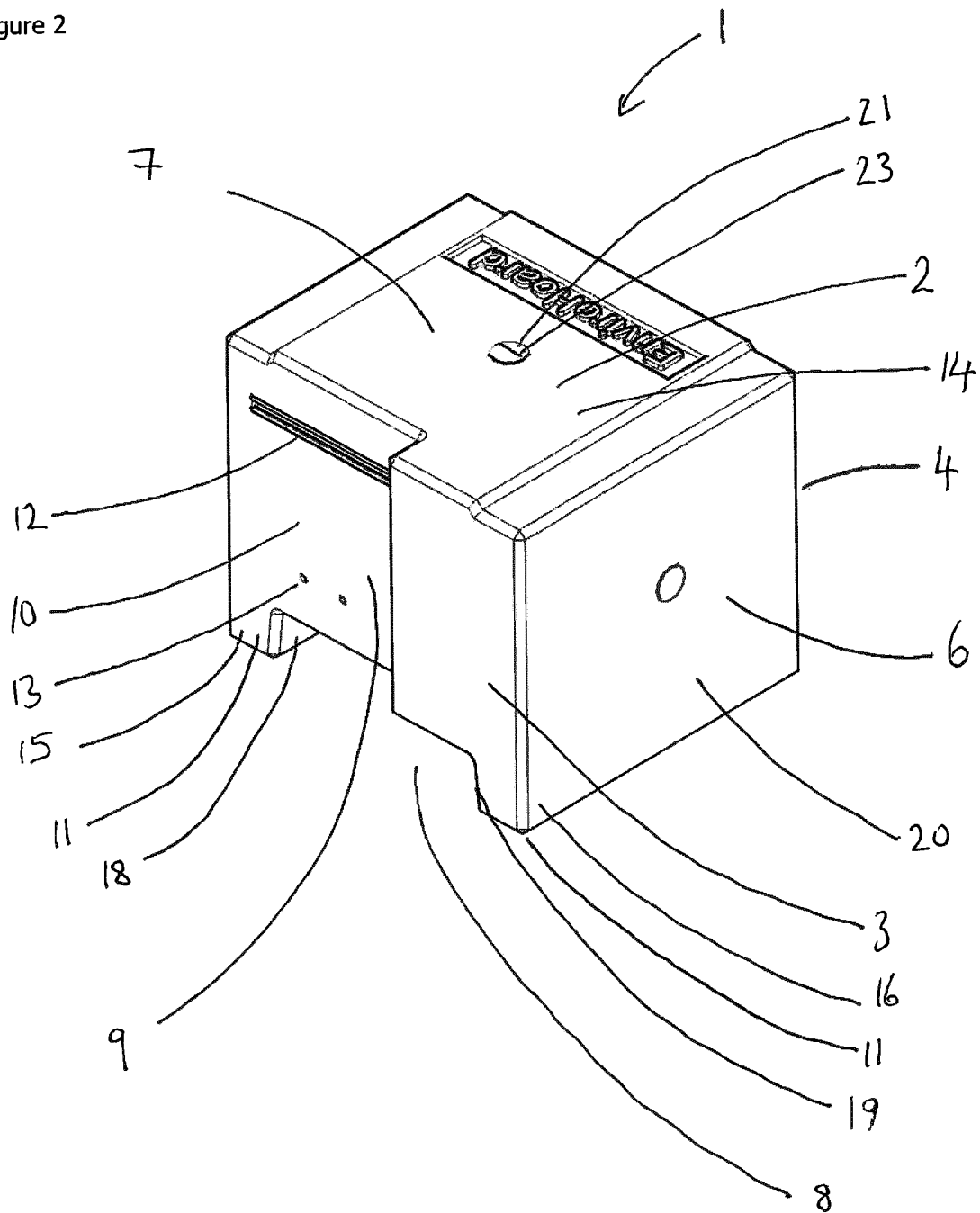


Figure 3

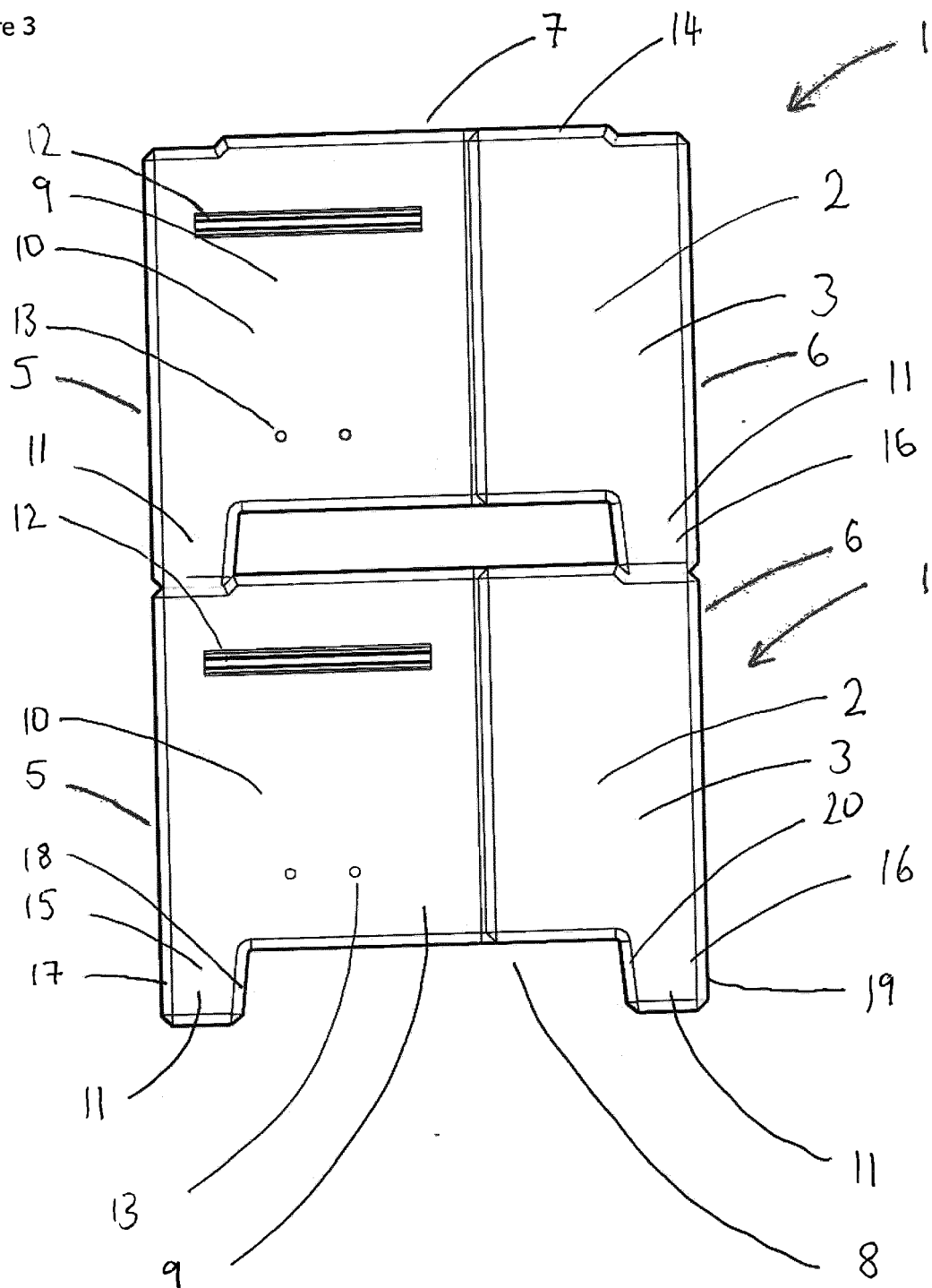


Figure 4

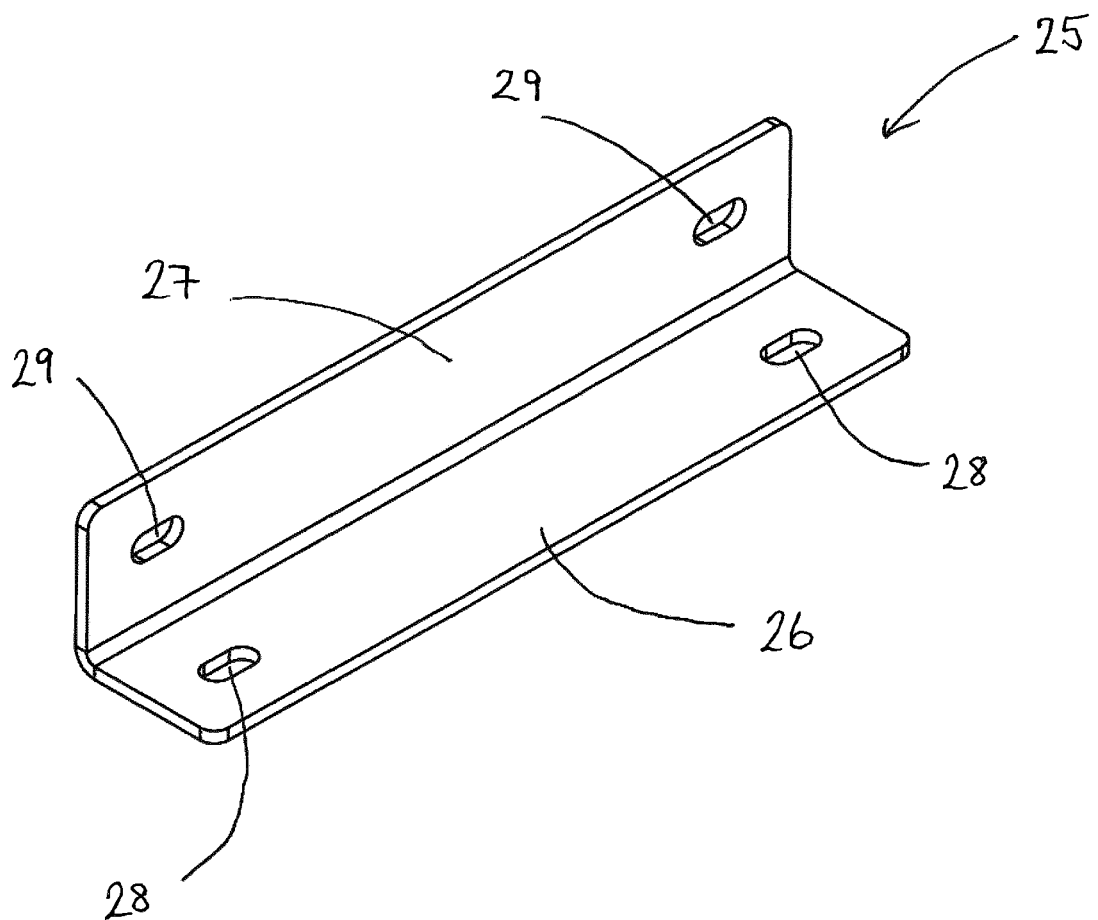


Figure 5

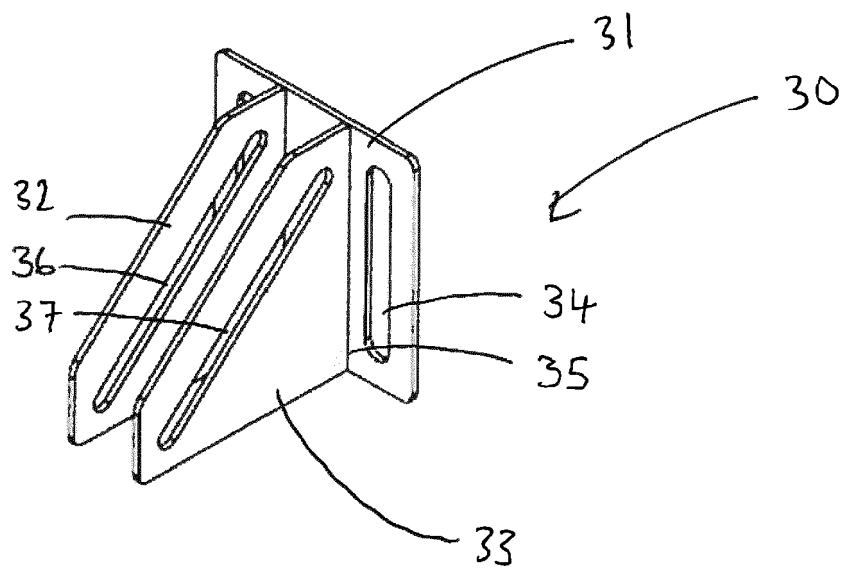
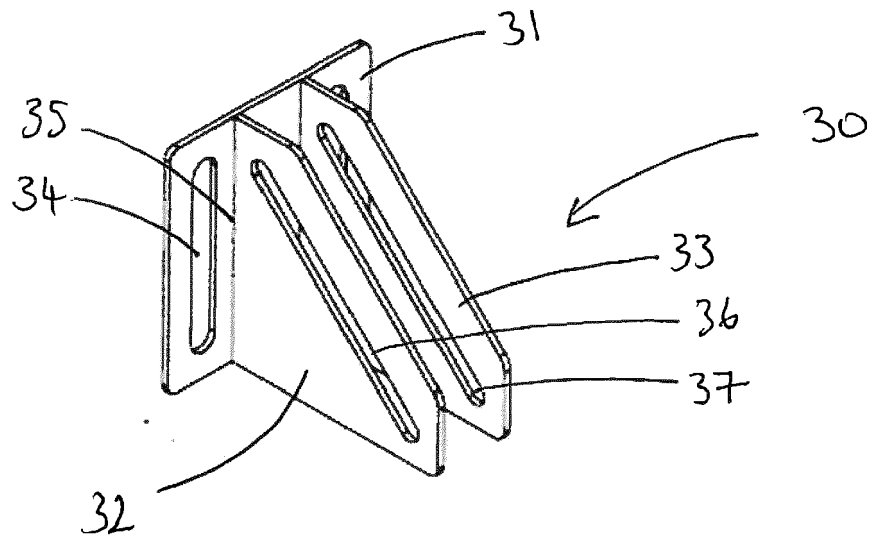


Figure 6

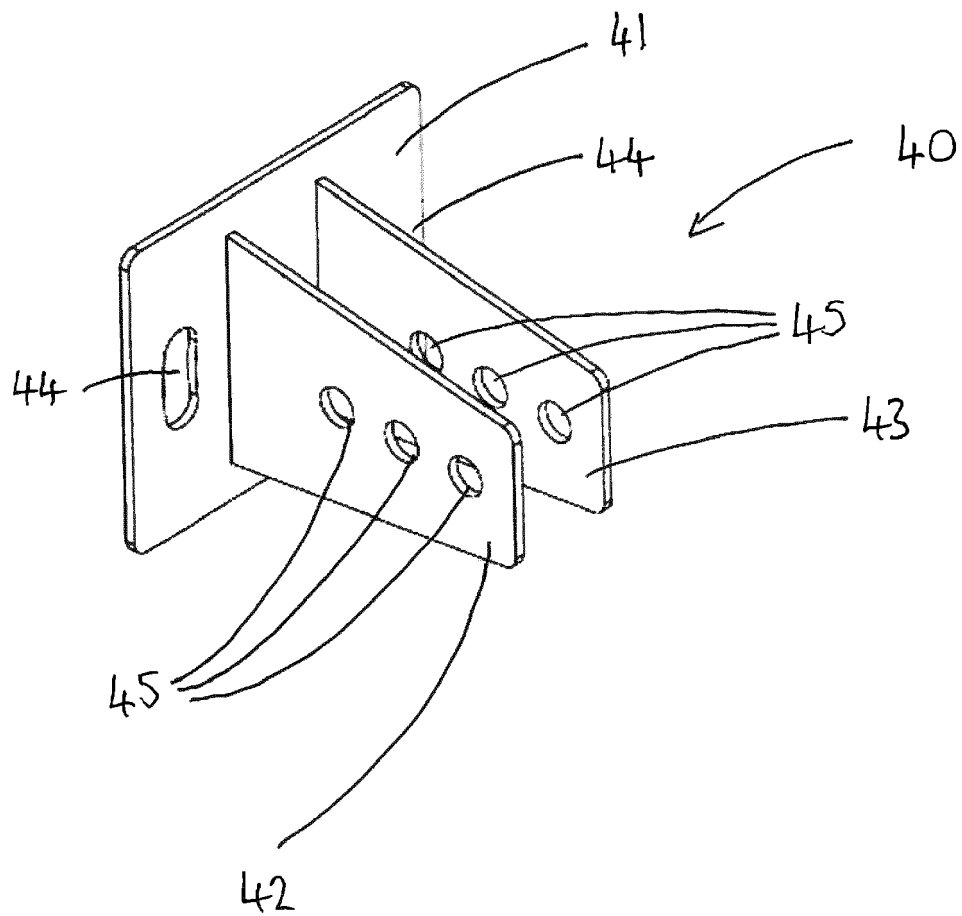


Figure 7

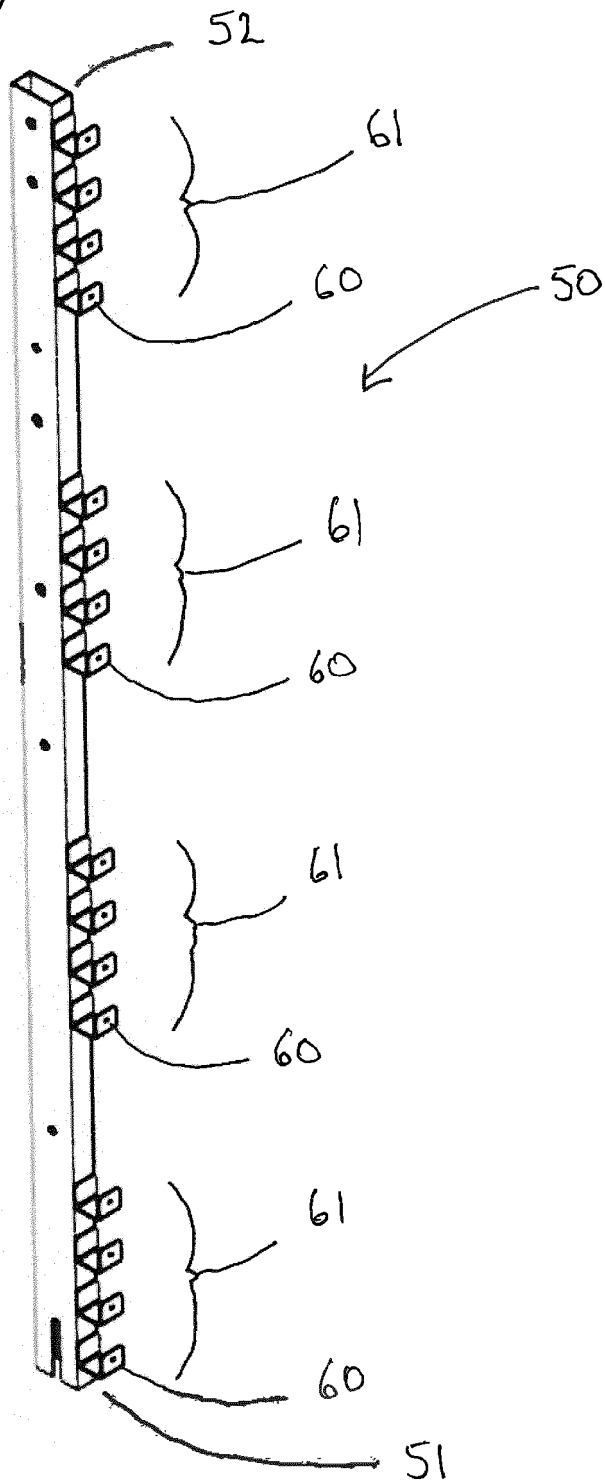


Figure 8

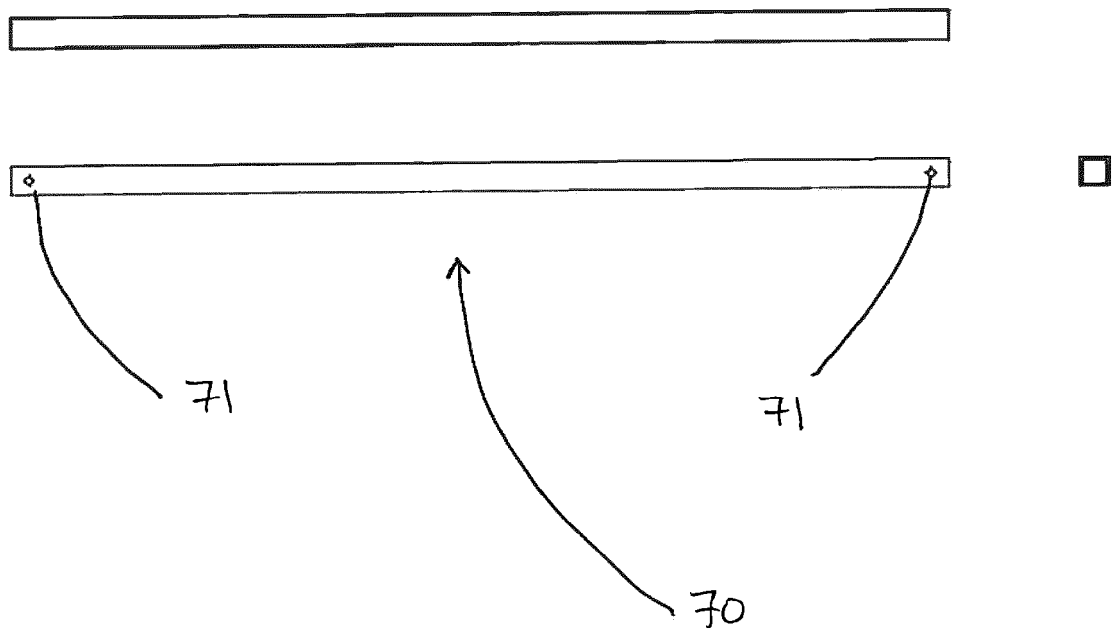


Figure 9

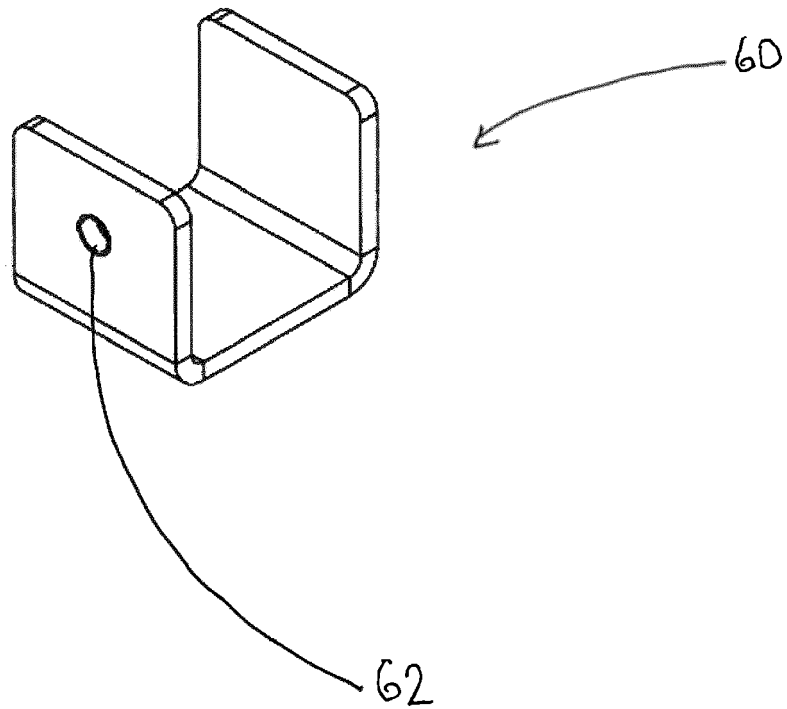


Figure 10

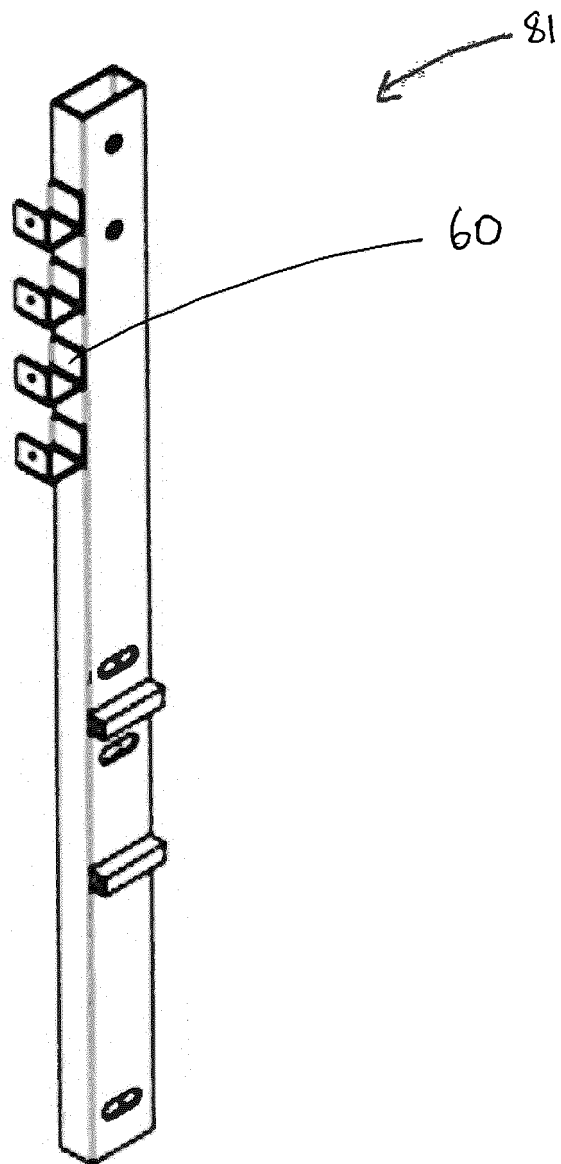
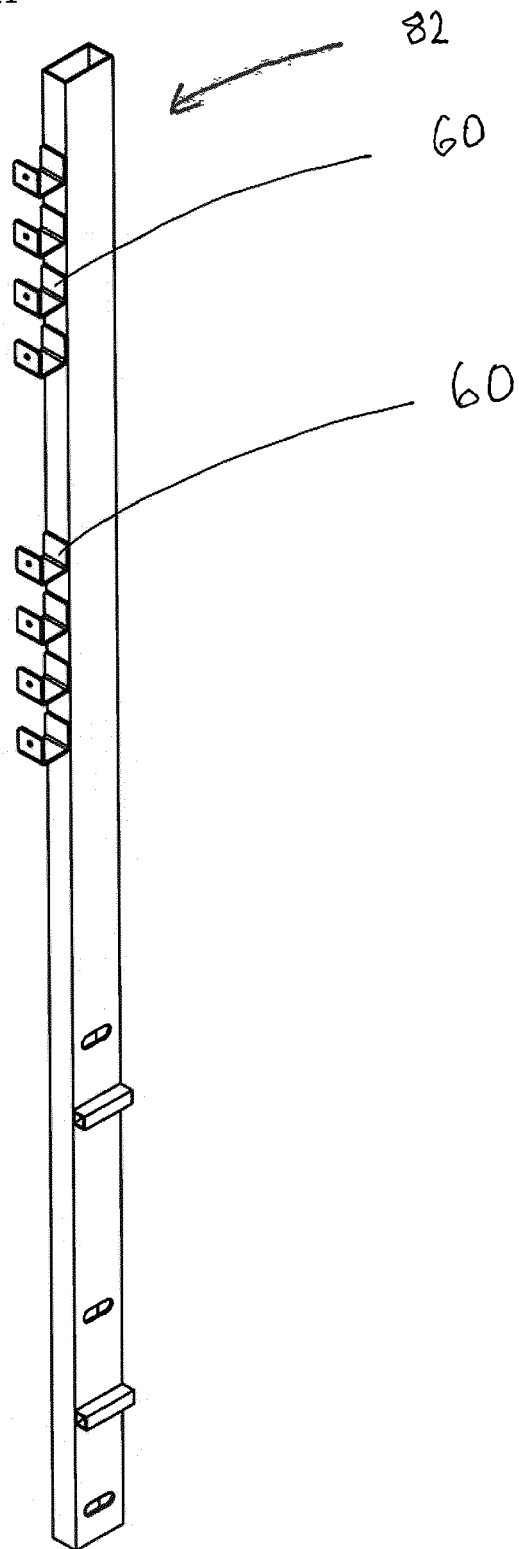


Figure 11





EUROPEAN SEARCH REPORT

Application Number

EP 22 15 5505

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X	DE 20 2004 016430 U1 (ZINGERLE METAL S R L [IT]) 20 January 2005 (2005-01-20) * column 0015 - column 0023; figure 1 *	1-15	
X	DE 202 02 649 U1 (CHEN JAMES [TW]) 13 June 2002 (2002-06-13) * paragraph [0027] - paragraph [0033]; figure 1 *	1-15	
A	EP 2 230 356 A2 (EASI EDGE LTD [GB]; SHEPHERD CONSTRUCTION LTD [GB]) 22 September 2010 (2010-09-22) * figures 1, 3a * * paragraph [0032] - paragraph [0039]; figures 1, 3a * * paragraph [0040] - paragraph [0042] *	1-15	TECHNICAL FIELDS SEARCHED (IPC) E04H E01F E04G
The present search report has been drawn up for all claims			

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EPO FORM 1503 03:82 (P04C01)

Place of search Munich	Date of completion of the search 27 May 2022	Examiner Valenta, Ivar
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document		

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

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