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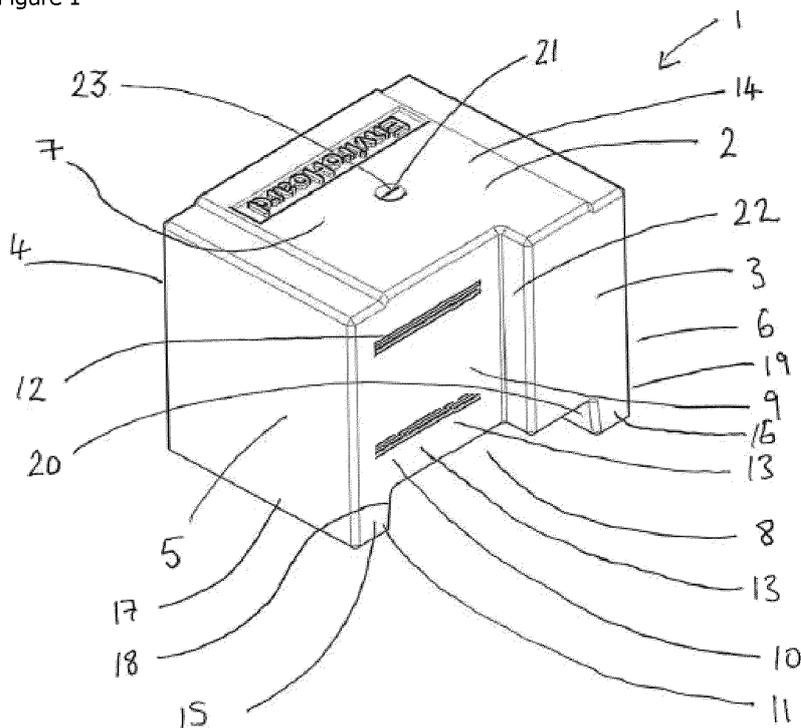
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(54) **BLOCK FOR SUPPORTING A HOARDING SYSTEM**

(57) A substantially cuboid block (1) for supporting a hoarding system comprises a body (2) having a length between a first set of two parallel planes at a front (3) and back (4) of the body, a width between a second set of two parallel planes defined at first and second sides (5,6), each plane of the second set being substantially perpendicular to the planes of the first set, a height being between a third set of two parallel planes defined at a

top and bottom surfaces (7,8), 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 (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).

Figure 1



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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.

[0010] Preferably, the channel is cast into the block so that the face of the channel is substantially flush with the indented front surface of the block. Preferably, the channel is cold rolled with anchorage studs which are preferably swaged and preferably set into the block. Preferably, the channel is of a hot dip galvanised steel or stainless steel.

[0011] Preferably, the channel comprises a substantially straight groove having first and second sides and a substantially planar base therebetween.

[0012] Preferably, the distance from the first side to the second side of the groove increases from the substantially planar base of the groove to the indented front surface of the block.

[0013] Preferably, a ledge is provided on each side of the groove to define a slot having an inverted T cross section.

[0014] In this regard, preferably, the groove has first and second sides which are substantially parallel, each side comprising a base; a lower wall disposed between the base and the indented front surface, wherein the lower wall is substantially planar; and an upper wall disposed between the lower wall and the indented front surface, wherein the upper wall is substantially planar; wherein a distance measured between the upper wall on the first side and the upper wall on the second side is smaller than a distance between the lower wall on the first side and the lower wall on the second side.

[0015] The concept of such a channel is to provide positive ledges against which elements projecting from a head of a T bolt may be tightened to provide a means for retaining the head of a T bolt placed therein against rotation such that a nut may be threaded upon an outwardly extending shaft of the bolt.

[0016] Preferably, the channel is located in the top half of the indented front surface of the block.

[0017] Preferably, the channel is substantially parallel

with the third set of two parallel planes.

[0018] Preferably, the distance between the lower wall on the first side and the lower wall on the second side of the groove of the channel is about 30mm to about 50mm, more preferably about 40mm.

[0019] Preferably, the channel extends across the indented front surface. Preferably, a distance from each end of the channel to the end of the indented front surface of the block is substantially equal. Preferably, the channel has a length of about 300mm to about 400mm, more preferably about 350mm.

[0020] Preferably, the channel has a depth of up to about 30mm. More preferably, the channel has a depth of about 5mm to about 25mm, more preferably about 15mm.

[0021] Preferably, the channel has two or three, more preferably three, anchor studs projecting into the body of the block from the base of the channel. Preferably, the anchor studs are equally spaced. Preferably, each anchor stud projects about 40mm to about 100mm, more preferably about 80mm from the base of the channel into the body of the block. Preferably, the anchor studs are located at least about 100mm away from the adjoining surface of the block. This provides the advantage of securely anchoring the channel in the block.

[0022] Preferably, at least one fixing is provided having a shaft which extends outwardly from the channel. More preferably, two fixings are provided.

[0023] Preferably, each fixing is capable of being held captive in the channel and wherein the fixing is slideable along the channel.

[0024] Preferably, the shaft of the fixing is threaded such that a threaded nut may be tightened onto the outwardly extending shaft of the fixing.

[0025] Preferably, the fixing is a T bolt. Preferably, the fixing has a diameter of about 10mm to about 20mm, more preferably about 16mm. Most preferably, the fixing is an M16 T bolt. Preferably, the fixing has a threaded length of about 20mm to about 70mm. More preferably, the fixing has a threaded length of about 30mm.

[0026] Preferably a second elongate channel is located in the indented front surface, the channel for receiving one or more fixing to secure a second post bracket.

[0027] Preferably, the second channel is substantially parallel to the first channel.

[0028] Preferably, the second channel is cast into the block so that the face of the second channel is substantially flush with the indented front surface of the block. Preferably, the second channel is cold rolled with anchorage studs which are preferably swaged and preferably set into the block. Preferably, the second channel is of a hot dip galvanised steel or stainless steel.

[0029] Preferably, the second channel comprises a substantially straight groove having first and second sides and a substantially planar base therebetween.

[0030] Preferably, the distance from the first side to the second side of the groove increases from the substantially planar base of the groove to the indented front sur-

face of the block.

[0031] Preferably, a ledge is provided on each side of the groove to define a slot having an inverted T cross section.

5 **[0032]** In this regard, preferably, the groove has first and second sides which are substantially parallel, each side comprising a base; a lower wall disposed between the base and the indented front surface, wherein the lower wall is substantially planar; and an upper wall disposed
10 between the lower wall and the indented front surface, wherein the upper wall is substantially planar; wherein a distance measured between the upper wall on the first side and the upper wall on the second side is smaller than a distance between the lower wall on the first side and the lower wall on the second side.

15 **[0033]** The concept of such a second channel is the same as the first channel and to provide positive ledges against which elements projecting from a head of a T bolt may be tightened to provide a means for retaining the head of a T bolt placed therein against rotation such that a nut may be threaded upon an outwardly extending shaft of the bolt.

[0034] Preferably, the second channel is located in the lower half of the indented front surface of the block.

25 **[0035]** Preferably, the second channel is substantially parallel with the third set of two parallel planes.

[0036] Preferably, the distance between the lower wall on the first side and the lower wall on the second side of the groove of the second channel is about 30mm to about
30 50mm, more preferably about 40mm.

[0037] Preferably, the second channel extends across the indented front surface. Preferably, a distance from each end of the second channel to the end of the indented front surface of the block is substantially equal. Preferably,
35 the second channel has a length of about 300mm to about 400mm, more preferably about 350mm.

[0038] Preferably, the second channel has a depth of up to about 30mm. More preferably, the second channel has a depth of about 5mm to about 25mm, more preferably
40 about 15mm.

[0039] Preferably, the second channel has two or three, more preferably three, anchor studs projecting into the body of the block from the base of the second channel. Preferably, the anchor studs are equally spaced. Preferably,
45 each anchor stud projects about 40mm to about 100mm, more preferably about 80mm from the base of the second channel into the body of the block. Preferably, the anchor studs are located at least about 100mm away from the adjoining surface of the block. This provides the advantage of securely anchoring the second channel in
50 the block.

[0040] Preferably, at least one fixing is provided having a shaft which extends outwardly from the second channel. More preferably, two fixings are provided.

55 **[0041]** Preferably, each fixing is capable of being held captive in the second channel and wherein the fixing is slideable along the channel.

[0042] Preferably, the shaft of the fixing is threaded

such that a threaded nut may be tightened onto the outwardly extending shaft of the fixing.

[0043] Preferably, the fixing is a T bolt. Preferably, the fixing has a diameter of about 10mm to about 20mm, more preferably about 16mm. Most preferably, the fixing is an M16 T bolt. Preferably, the fixing has a threaded length of about 20mm to about 70mm. More preferably, the fixing has a threaded length of about 30mm.

[0044] Preferably, the first post bracket is an upper post bracket. Preferably, the second post bracket is a lower post bracket.

[0045] 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.

[0046] 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.

[0047] 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.

[0048] 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.

[0049] 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 kentrledge, for example at the ends and corners of a hoarding, where there may be increased wind load.

[0050] 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.

[0051] 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.

[0052] 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.

[0053] 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.

5 **[0054]** 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.

10 **[0055]** Preferably, the block has a mass of about 750kg to about 850kg. More preferably, the block has a mass of about 800kg.

15 **[0056]** Preferably, a third elongate channel is located in the second side of the body, the third channel for receiving one or more fixings to secure an upper post bracket.

[0057] Preferably, the third channel is substantially parallel to the third set of two parallel planes. Preferably, the third channel is perpendicular to the first channel.

20 **[0058]** Preferably, the third channel is cast into the block so that the face of the third channel is substantially flush with the second surface of the body of the block. Preferably, the third channel is cold rolled with anchorage studs which are preferably swaged and preferably set into the block. Preferably, the third channel is of a hot dip galvanised steel or stainless steel.

25 **[0059]** Preferably, the third channel comprises a substantially straight groove having first and second sides and a substantially planar base therebetween.

30 **[0060]** Preferably, the distance from the first side to the second side of the groove increases from the substantially planar base of the groove to the second surface of the body of the block.

35 **[0061]** Preferably, a ledge is provided on each side of the groove to define a slot having an inverted T cross section.

[0062] In this regard, preferably, the groove has first and second sides which are substantially parallel, each side comprising a base; a lower wall disposed between the base and the indented front surface, wherein the lower wall is substantially planar; and an upper wall disposed between the lower wall and the indented front surface, wherein the upper wall is substantially planar; wherein a distance measured between the upper wall on the first side and the upper wall on the second side is smaller than a distance between the lower wall on the first side and the lower wall on the second side.

[0063] The concept of such a third channel is the same as the first and second channels and to provide positive ledges against which elements projecting from a head of a T bolt may be tightened to provide a means for retaining the head of a T bolt placed therein against rotation such that a nut may be threaded upon an outwardly extending shaft of the bolt.

50 **[0064]** Preferably, the third channel is located in the upper half of the second side of the body of the block.

[0065] Preferably, the third channel is substantially parallel with the third set of two parallel planes.

[0066] Preferably, the distance between the lower wall on the first side and the lower wall on the second side of the groove of the third channel is about 30mm to about 50mm, more preferably about 40mm.

[0067] Preferably, the third channel extends across the second side of the body of the block. Preferably, a distance from each end of the third channel to the end of the second side of the body of the block is substantially equal. In this regard, preferably, the third channel is located equidistant between the front and the back of the body of the block. Preferably, the third channel has a length of about 300mm to about 400mm, more preferably about 350mm.

[0068] Preferably, the third channel has a depth of up to about 30mm. More preferably, the third channel has a depth of about 5mm to about 25mm, more preferably about 15mm.

[0069] Preferably, the third channel has two or three, more preferably three, anchor studs projecting into the body of the block from the base of the third channel. Preferably, the anchor studs are equally spaced. Preferably, each anchor stud projects about 40mm to about 100mm, more preferably about 80mm from the base of the third channel into the body of the block. Preferably, the anchor studs are located at least about 100mm away from the front or back of the block. This provides the advantage of securely anchoring the third channel in the block.

[0070] Preferably, at least one fixing is provided having a shaft which extends outwardly from the third channel. More preferably, two fixings are provided.

[0071] Preferably, each fixing is capable of being held captive in the third channel and wherein the fixing is slideable along the channel.

[0072] Preferably, the shaft of the fixing is threaded such that a threaded nut may be tightened onto the outwardly extending shaft of the fixing.

[0073] Preferably, the fixing is a T bolt. Preferably, the fixing has a diameter of about 10mm to about 20mm, more preferably about 16mm. Most preferably, the fixing is an M16 T bolt. Preferably, the fixing has a threaded length of about 20mm to about 70mm. More preferably, the fixing has a threaded length of about 30mm.

[0074] Preferably, a fourth elongate channel is located in the second side of the body, the fourth channel for receiving one or more fixings to secure a lower post bracket.

[0075] Preferably, the fourth channel is substantially parallel to the third set of two parallel planes. Preferably, the fourth channel is perpendicular to the second channel.

[0076] Preferably, the fourth channel is cast into the block so that the face of the fourth channel is substantially flush with the second surface of the body of the block. Preferably, the fourth channel is cold rolled with anchorage studs which are preferably swaged and preferably set into the block. Preferably, the fourth channel is of a hot dip galvanised steel or stainless steel.

[0077] Preferably, the fourth channel comprises a sub-

stantially straight groove having first and second sides and a substantially planar base therebetween.

[0078] Preferably, the distance from the first side to the second side of the groove increases from the substantially planar base of the groove to the second surface of the body of the block.

[0079] Preferably, a ledge is provided on each side of the groove to define a slot having an inverted T cross section.

[0080] In this regard, preferably, the groove has first and second sides which are substantially parallel, each side comprising a base; a lower wall disposed between the base and the indented front surface, wherein the lower wall is substantially planar; and an upper wall disposed between the lower wall and the indented front surface, wherein the upper wall is substantially planar; wherein a distance measured between the upper wall on the first side and the upper wall on the second side is smaller than a distance between the lower wall on the first side and the lower wall on the second side.

[0081] The concept of such a fourth channel is the same as the first, second and third channels and to provide positive ledges against which elements projecting from a head of a T bolt may be tightened to provide a means for retaining the head of a T bolt placed therein against rotation such that a nut may be threaded upon an outwardly extending shaft of the bolt.

[0082] Preferably, the fourth channel is located in the lower half of the second side of the body of the block.

[0083] Preferably, the fourth channel is substantially parallel with the third set of two parallel planes.

[0084] Preferably, the distance between the lower wall on the first side and the lower wall on the second side of the groove of the fourth channel is about 30mm to about 50mm, more preferably about 40mm.

[0085] Preferably, the fourth channel extends across the second side of the body of the block. Preferably, a distance from each end of the fourth channel to the end of the second side of the body of the block is substantially equal. In this regard, preferably, the fourth channel is located equidistant between the front and the back of the body of the block. Preferably, the fourth channel has a length of about 300mm to about 400mm, more preferably about 350mm.

[0086] Preferably, the fourth channel has a depth of up to about 30mm. More preferably, the fourth channel has a depth of about 5mm to about 25mm, more preferably about 15mm.

[0087] Preferably, the fourth channel has two or three, more preferably three, anchor studs projecting into the body of the block from the base of the fourth channel. Preferably, the anchor studs are equally spaced. Preferably, each anchor stud projects about 40mm to about 100mm, more preferably about 80mm from the base of the fourth channel into the body of the block. Preferably, the anchor studs are located at least about 100mm away from the front or back of the block. This provides the advantage of securely anchoring the fourth channel in

the block.

[0088] Preferably, at least one fixing is provided having a shaft which extends outwardly from the fourth channel. More preferably, two fixings are provided.

[0089] Preferably, each fixing is capable of being held captive in the fourth channel and wherein the fixing is slideable along the fourth channel.

[0090] Preferably, the shaft of the fixing is threaded such that a threaded nut may be tightened onto the outwardly extending shaft of the fixing.

[0091] Preferably, the fixing is a T bolt. Preferably, the fixing has a diameter of about 10mm to about 20mm, more preferably about 16mm. Most preferably, the fixing is an M16 T bolt. Preferably, the fixing has a threaded length of about 20mm to about 70mm. More preferably, the fixing has a threaded length of about 30mm.

[0092] 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.

[0093] 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.

[0094] 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.

[0095] 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 a bolt. Preferably, only two holes are defined in the second flange. In use, fixings are placed through the holes and fixed to a block.

[0096] 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.

[0097] 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.

[0098] 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.

[0099] Preferably, the hoarding system comprises a plurality of second post brackets, each second post bracket being securable in a releasable manner to the second channel in a block. In one embodiment, the second post bracket is securable to the second channel in a block by one or more fixing. Preferably the fixing comprises a bolt.

[0100] 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.

[0101] 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.

[0102] 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.

[0103] 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 ad-

vantageous, 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.

[0104] 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.

[0105] Preferably, the rear mounted post bracket allows the same adjustment of the post as brackets fixed to the front of the block.

[0106] Preferably, upper and lower brackets are fixed to the rear mounted post bracket. Preferably, it is these components that a post can be fixed to.

[0107] 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.

[0108] 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.

[0109] 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.

[0110] Preferably, each post has a height of about 2400mm.

[0111] 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.

[0112] 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.

[0113] 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.

[0114] 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.

5 **[0115]** 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.

10 **[0116]** 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.

25 **[0117]** Preferably, the rail joiner is defined by a generally octagonal flange.

[0118] 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.

30 **[0119]** 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.

35 **[0120]** 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.

40 **[0121]** 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.

45 **[0122]** 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.

55 **[0123]** 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.

[0124] 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.

[0125] 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.

[0126] 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

[0127] 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;

Figure 11 shows a perspective view of an alternative

extension post of a hoarding system of the invention.

Detailed Description of the Invention

[0128] 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.

[0129] 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%.

[0130] Within the context of this specification, the word "substantially" means preferably at least 90%, more preferably 95%, even more preferably 98%, most preferably 99%.

[0131] Within the context of this specification, the word "comprises" means "includes, among other things" and should not be construed to mean "consists of only".

[0132] 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 first 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). A second channel (13) parallel to the first channel is located in the bottom half of the indented front surface (10) below the first channel (12) and substantially equidistant from the channel (12). In use, the second channel (13) receives fixings to secure a second post bracket (40).

[0133] The first channel (12) is cast into the block so that the face of the channel is substantially flush with the indented front surface (10) of the block (1). The channel (12) is cold rolled with anchorage studs which are pref-

erably swaged and preferably set into the block (1). The channel (12) is of a hot dip galvanised steel or stainless steel.

[0134] The channel (12) comprises a substantially straight groove having first and second sides and a substantially planar base therebetween.

[0135] The distance from the first side to the second side of the groove increases from the substantially planar base of the groove to the indented front surface (10) of the block (1).

[0136] A ledge is provided on each side of the groove to define a slot having an inverted T cross section.

[0137] The groove has first and second sides which are substantially parallel, each side comprising a base; a lower wall disposed between the base and the indented front surface, wherein the lower wall is substantially planar; and an upper wall disposed between the lower wall and the indented front surface, wherein the upper wall is substantially planar; wherein a distance measured between the upper wall on the first side and the upper wall on the second side is smaller than a distance between the lower wall on the first side and the lower wall on the second side.

[0138] The concept of such a channel (12) is to provide positive ledges against which elements projecting from a head of a T bolt may be tightened to provide a means for retaining the head of a T bolt placed therein against rotation such that a nut may be threaded upon an outwardly extending shaft of the bolt.

[0139] The channel (12) is located in the top half of the indented front surface (10) of the block (1).

[0140] The channel (12) is substantially parallel with the third set of two parallel planes.

[0141] The distance between the lower wall on the first side and the lower wall on the second side of the groove of the channel (12) is about 40mm.

[0142] The channel (12) extends across the indented front surface (10). A distance from each end of the channel (12) to the end of the indented front surface (10) of the block (1) is substantially equal. The channel (12) has a length of about 350mm.

[0143] The channel (12) has a depth of up to about 15mm.

[0144] The channel (12) has three anchor studs projecting into the body of the block (1) from the base of the channel (12). The anchor studs are equally spaced. Each anchor stud projects about 80mm from the base of the channel (12) into the body (2) of the block (1). The anchor studs are located at least about 100mm away from the adjoining surface of the block (1). This provides the advantage of securely anchoring the channel (12) in the block (1).

[0145] Two M16 T bolts are provided each having a shaft which extends outwardly from the channel (12).

[0146] Each fixing is capable of being held captive in the channel (12) and wherein the fixing is slideable along the channel (12).

[0147] The shaft of each T bolt is threaded such that

a threaded nut may be tightened onto the outwardly extending shaft of the T bolt. Each T bolt has a threaded length of about 30mm.

[0148] A second elongate channel (13) is located in the indented front surface, the channel (13) for receiving one or more fixings to secure a second post bracket (40).

[0149] The second channel (13) is substantially parallel to the first channel (12).

[0150] The second channel (13) is cast into the block so that the face of the second channel (13) is substantially flush with the indented front surface (10) of the block (1). The second channel (13) is cold rolled with anchorage studs which are swaged and set into the block (1). The second channel (13) is of a hot dip galvanised steel or stainless steel.

[0151] The second channel (13) comprises a substantially straight groove having first and second sides and a substantially planar base therebetween.

[0152] The distance from the first side to the second side of the groove increases from the substantially planar base of the groove to the indented front surface (10) of the block (1).

[0153] A ledge is provided on each side of the groove to define a slot having an inverted T cross section.

[0154] The groove has first and second sides which are substantially parallel, each side comprising a base; a lower wall disposed between the base and the indented front surface, wherein the lower wall is substantially planar; and an upper wall disposed between the lower wall and the indented front surface, wherein the upper wall is substantially planar; wherein a distance measured between the upper wall on the first side and the upper wall on the second side is smaller than a distance between the lower wall on the first side and the lower wall on the second side.

[0155] The concept of such a second channel (13) is the same as the first channel (12) and to provide positive ledges against which elements projecting from a head of a T bolt may be tightened to provide a means for retaining the head of a T bolt placed therein against rotation such that a nut may be threaded upon an outwardly extending shaft of the bolt.

[0156] The second channel (13) is located in the lower half of the indented front surface (10) of the block (1).

[0157] The second channel (13) is substantially parallel with the third set of two parallel planes.

[0158] The distance between the lower wall on the first side and the lower wall on the second side of the groove of the second channel (13) is about 40mm.

[0159] The second channel (13) extends across the indented front surface (10). A distance from each end of the second channel (13) to the end of the indented front surface (10) of the block (1) is substantially equal. The second channel (13) has a length of about 350mm.

[0160] The second channel (13) has a depth of about 15mm.

[0161] The second channel (13) has three anchor studs projecting into the body (2) of the block (1) from

the base of the second channel (13). The anchor studs are equally spaced. Each anchor stud projects about 80mm from the base of the second channel (13) into the body (2) of the block (1). The anchor studs are located at least about 100mm away from the adjoining surface of the block (1). This provides the advantage of securely anchoring the second channel (13) in the block (1).

[0162] Two M16 T bolts are provided, each having a shaft which extends outwardly from the second channel (13).

[0163] Each T bolt is capable of being held captive in the second channel (13) and wherein the fixing is slideable along the channel (13). The shaft of each T bolt is threaded such that a threaded nut may be tightened onto the outwardly extending shaft of the T bolt. Each T bolt has a threaded length of about 30mm.

[0164] 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.

[0165] 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.

[0166] 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).

[0167] The third projection (16) has a length corresponding to the distance between the first set of parallel planes.

[0168] 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).

[0169] 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).

[0170] 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).

[0171] The first, second and third projections (14, 15, 16) each have a height which corresponds to each other.

[0172] 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.

[0173] The minimum concrete strength at 28 days is about 50N/mm² to comply with current CE requirements.

10 **[0174]** The concrete is Class A1 Fire Resistant in accordance with clause 4.3.4.4 of EN 13369.

[0174] The concrete block (1) can be cast using cement free products which provides a lower carbon solution to standard concrete.

15 **[0175]** 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).

20 **[0176]** 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.

25 **[0177]** 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.

[0178] The block (1) has a mass of about 800kg.

30 **[0179]** A third elongate channel (80) is located in the second side of the body (2) of the block (1), the third channel (80) for receiving one or more fixings to secure an upper post bracket (30).

35 **[0180]** The third channel (80) is substantially parallel to the third set of two parallel planes. The third channel (80) is perpendicular to the first channel (12).

[0181] The third channel (80) is cast into the block (1) so that the face of the third channel (80) is substantially flush with the second side (6) of the body (2) of the block (1). The third channel (80) is cold rolled with anchorage studs which are swaged and set into the block (1). The third channel (80) is of a hot dip galvanised steel or stainless steel.

40 **[0182]** The third channel (80) comprises a substantially straight groove having first and second sides and a substantially planar base therebetween.

45 **[0183]** The distance from the first side to the second side of the groove increases from the substantially planar base of the groove to the second side (6) of the body (2) of the block (1).

[0184] A ledge is provided on each side of the groove to define a slot having an inverted T cross section.

50 **[0185]** The groove has first and second sides which are substantially parallel, each side comprising a base; a lower wall disposed between the base and the indented front surface, wherein the lower wall is substantially planar; and an upper wall disposed between the lower wall and the indented front surface, wherein the upper wall is

substantially planar; wherein a distance measured between the upper wall on the first side and the upper wall on the second side is smaller than a distance between the lower wall on the first side and the lower wall on the second side.

[0186] The concept of such a third channel (80) is the same as the first (12) and second (13) channels and to provide positive ledges against which elements projecting from a head of a T bolt may be tightened to provide a means for retaining the head of a T bolt placed therein against rotation such that a nut may be threaded upon an outwardly extending shaft of the bolt.

[0187] The third channel (80) is located in the upper half of the second side (6) of the body (2) of the block (1).

[0188] The third channel (80) is substantially parallel with the third set of two parallel planes.

[0189] The distance between the lower wall on the first side and the lower wall on the second side of the groove of the third channel (80) is about 40mm.

[0190] The third channel (80) extends across the second side (6) of the body (2) of the block (1). A distance from each end of the third channel (6) to the end of the second side (6) of the body (2) of the block (1) is substantially equal. In this regard, the third channel (80) is located equidistant between the front (3) and the back (4) of the body (2) of the block (1). The third channel (80) has a length of about 350mm.

[0191] The third channel (80) has a depth of about 15mm.

[0192] The third channel (80) has three, anchor studs projecting into the body (2) of the block (1) from the base of the third channel (80). The anchor studs are equally spaced. Each anchor stud projects about 80mm from the base of the third channel (80) into the body (2) of the block (1). The anchor studs are located at least about 100mm away from the front (3) or back (4) of the block (1). This provides the advantage of securely anchoring the third channel (80) in the block (1).

[0193] Two M16 T bolts are provided, each having a shaft which extends outwardly from the third channel (80).

[0194] Each T bolt is capable of being held captive in the third channel (80) and wherein the fixing is slideable along the channel (80). The shaft of each T bolt is threaded such that a threaded nut may be tightened onto the outwardly extending shaft of each T bolt.

[0195] Each T bolt has a threaded length of about 30mm.

[0196] A fourth elongate channel (81) is located in the second side (6) of the body (2) of the block (1), the fourth channel (81) for receiving one or more fixings to secure a lower post bracket (40).

[0197] The fourth channel (81) is substantially parallel to the third set of two parallel planes. The fourth channel (81) is perpendicular to the second channel (13).

[0198] The fourth channel (81) is cast into the block (1) so that the face of the fourth channel (81) is substantially flush with the second surface (6) of the body (2) of the

block (1). The fourth channel (81) is cold rolled with anchorage studs which are swaged and set into the block (1). The fourth channel (81) is of a hot dip galvanised steel or stainless steel.

5 **[0199]** The fourth channel (81) comprises a substantially straight groove having first and second sides and a substantially planar base therebetween.

[0200] The distance from the first side to the second side of the groove increases from the substantially planar base of the groove to the second side (6) of the body (2) of the block (1).

[0201] A ledge is provided on each side of the groove to define a slot having an inverted T cross section.

10 **[0202]** In this regard, the groove has first and second sides which are substantially parallel, each side comprising a base; a lower wall disposed between the base and the indented front surface, wherein the lower wall is substantially planar; and an upper wall disposed between the lower wall and the indented front surface, wherein the upper wall is substantially planar; wherein a distance measured between the upper wall on the first side and the upper wall on the second side is smaller than a distance between the lower wall on the first side and the lower wall on the second side.

20 **[0203]** The concept of such a fourth channel (81) is the same as the first (12), second (13) and third (80) channels and to provide positive ledges against which elements projecting from a head of a T bolt may be tightened to provide a means for retaining the head of a T bolt placed therein against rotation such that a nut may be threaded upon an outwardly extending shaft of the bolt.

[0204] The fourth channel (81) is located in the lower half of the second side (6) of the body (2) of the block (1).

30 **[0205]** The fourth channel (81) is substantially parallel with the third set of two parallel planes.

[0206] The distance between the lower wall on the first side and the lower wall on the second side of the groove of the fourth channel (81) is about 40mm.

40 **[0207]** The fourth channel (81) extends across the second side (6) of the body (2) of the block (1). A distance from each end of the fourth channel (81) to the end of the second side (6) of the body (2) of the block (1) is substantially equal. In this regard, the fourth channel (81) is located equidistant between the front (3) and the back (4) of the body (2) of the block (1). The fourth channel (81) has a length of about 350mm.

[0208] The fourth channel (81) has a depth of about 15mm.

50 **[0209]** The fourth channel (81) has three anchor studs projecting into the body (2) of the block (1) from the base of the fourth channel (81). The anchor studs are equally spaced. Each anchor stud projects about 80mm from the base of the fourth channel (81) into the body (2) of the block (1). The anchor studs are located at least about 100mm away from the front (3) or back (4) of the block (1). This provides the advantage of securely anchoring the fourth channel (81) in the block (1).

55 **[0210]** Two M16 T bolts are provided, each having a

shaft which extends outwardly from the fourth channel (81).

[0211] Each T bolt is capable of being held captive in the fourth channel (81) and wherein each T bolt is slideable along the fourth channel (81). The shaft of each T bolt is threaded such that a threaded nut may be tightened onto the outwardly extending shaft of the T bolt. Each T bolt has a threaded length of about 30mm.

[0212] 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).

[0213] 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).

[0214] 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).

[0215] Referring to Figure 6, each second post bracket (40) is securable in a releasable matter to a second channel (13) in a block (1) by two T bolts.. In this regard, a T shaped end of a T-bolt is placed in the second channel (13) and turned to secure it in the second channel (13).

[0216] 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).

[0217] Referring to Figure 7, the hoarding system com-

prises 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).

[0218] 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).

[0219] 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.

[0220] The hoarding system comprises a plurality of solid uPVC or steel mesh panels (not shown) which are releasably attachable to rails (70).

[0221] 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.

[0222] 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 combination of a post (50) and extension post (82) having an overall height of about 3600mm.

[0223] The hoarding system comprises a cranked lighting bracket for fixing to the second end (52) of a post (50).

[0224] 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).

[0225] The hoarding system comprises a range of trims (not shown) which may be releasably attached to the panels (not shown).

[0226] 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.

[0227] 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.

[0228] 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.

[0229] 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.

[0230] At the top of each post (50) there is provision for a connection for a lighting bracket to be provided.

[0231] On the rear of each post (50) there is provision for a number of cable support brackets to be provided.

[0232] 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.

[0233] 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.

[0234] 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).

[0235] Each steel rail (70) has holes (71) defined therein at each end to allow for fixing to pedestrian gate frames where required.

[0236] Three rails (70) are used as standard with each post (50) however if required four rails (70) can be installed.

[0237] 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.

[0238] Shorter steel rails (70) are provided where elevations are under 3m.

[0239] Clips of electroplated metal are included to connect the recyclable uPVC panels to the horizontal galvanised steel rails (70) every 0.5m.

[0240] 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.

[0241] 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.

[0242] 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.

[0243] 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).

[0244] 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.

[0245] 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.

[0246] Panels can be extruded in lengths of up to about 7m in length in one piece meaning fewer joints are required.

[0247] Panels can be extruded in any RAL colour to meet corporate branding requirements.

[0248] 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.

[0249] In addition, advantageously, panels can be processed back into pellets ready to be reused for extruding back into new panels.

[0250] 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.

[0251] Rigid and flexi vertical corner trims can be added into the hoarding where required to provide an attractive finish.

[0252] All trims can be reused multiple times and are recyclable.

[0253] 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.

[0254] 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.

[0255] 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.

[0256] 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.

[0257] 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.

[0258] 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.

[0259] 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 first channel located in the indented front surface, the channel for receiving one or more fixing to secure a first post bracket.
2. The block according to claim 1, wherein the first 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 a second channel is located in the bottom half of the indented front surface below the first channel.
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 cor-

responding to the distance between the first set of parallel planes.

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.
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.
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.
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.
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.
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 matter to the second channel 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. 5

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. 10
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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. 25
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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. 35
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. 40
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. 45

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Figure 1

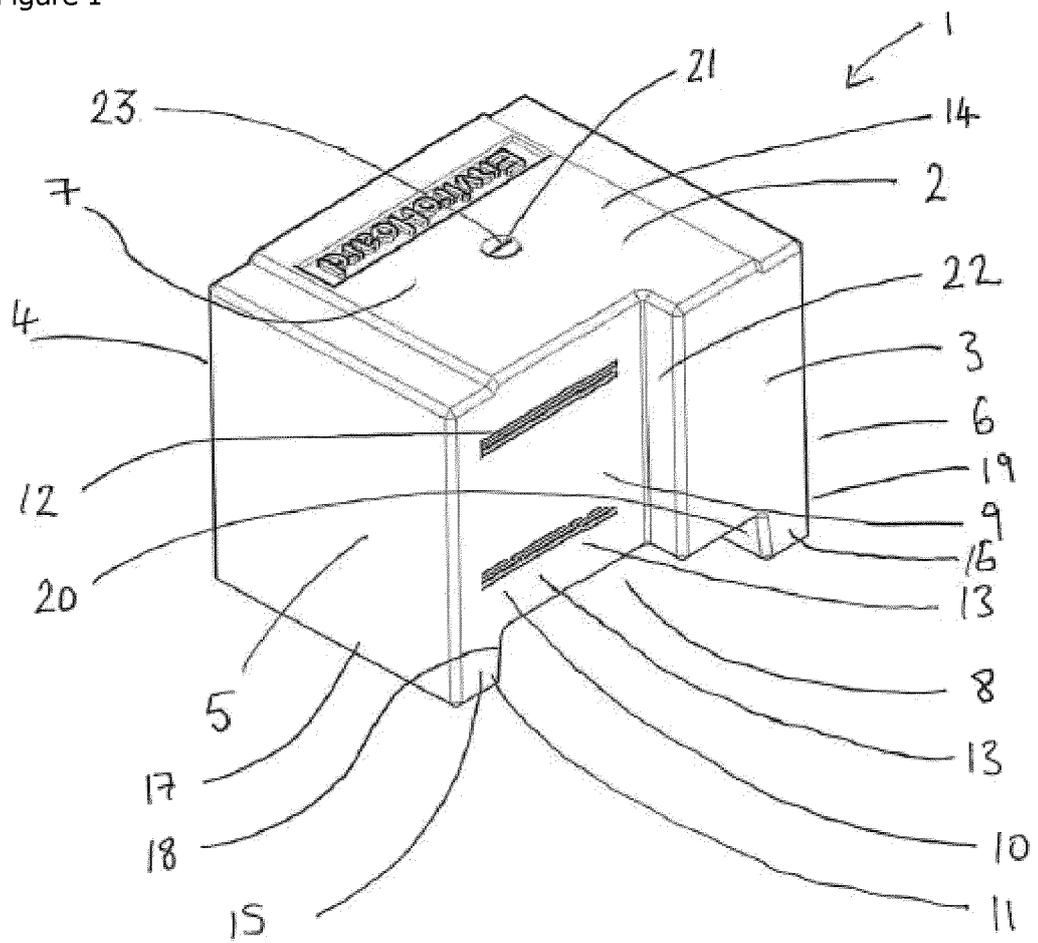


Figure 2

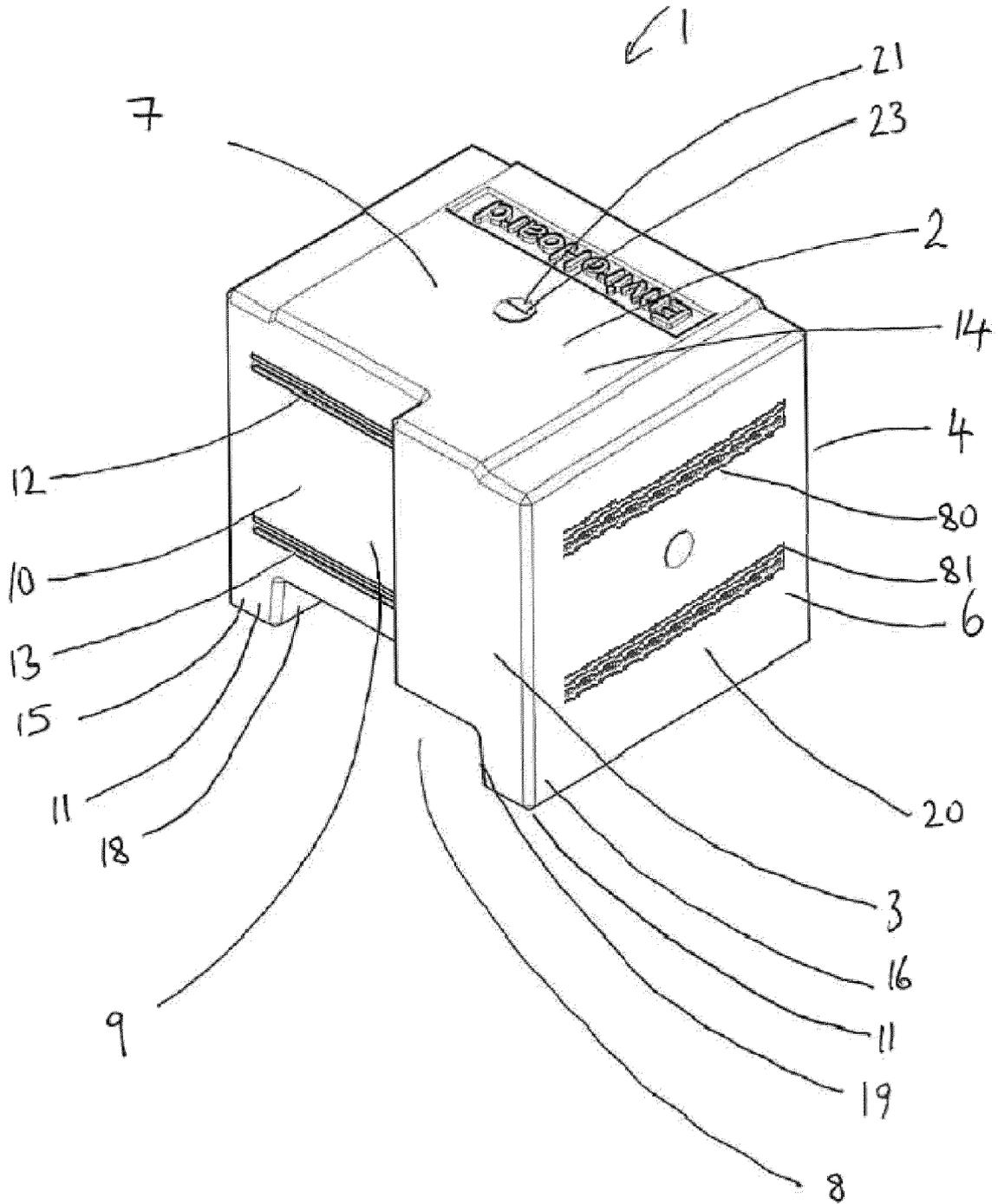


Figure 3

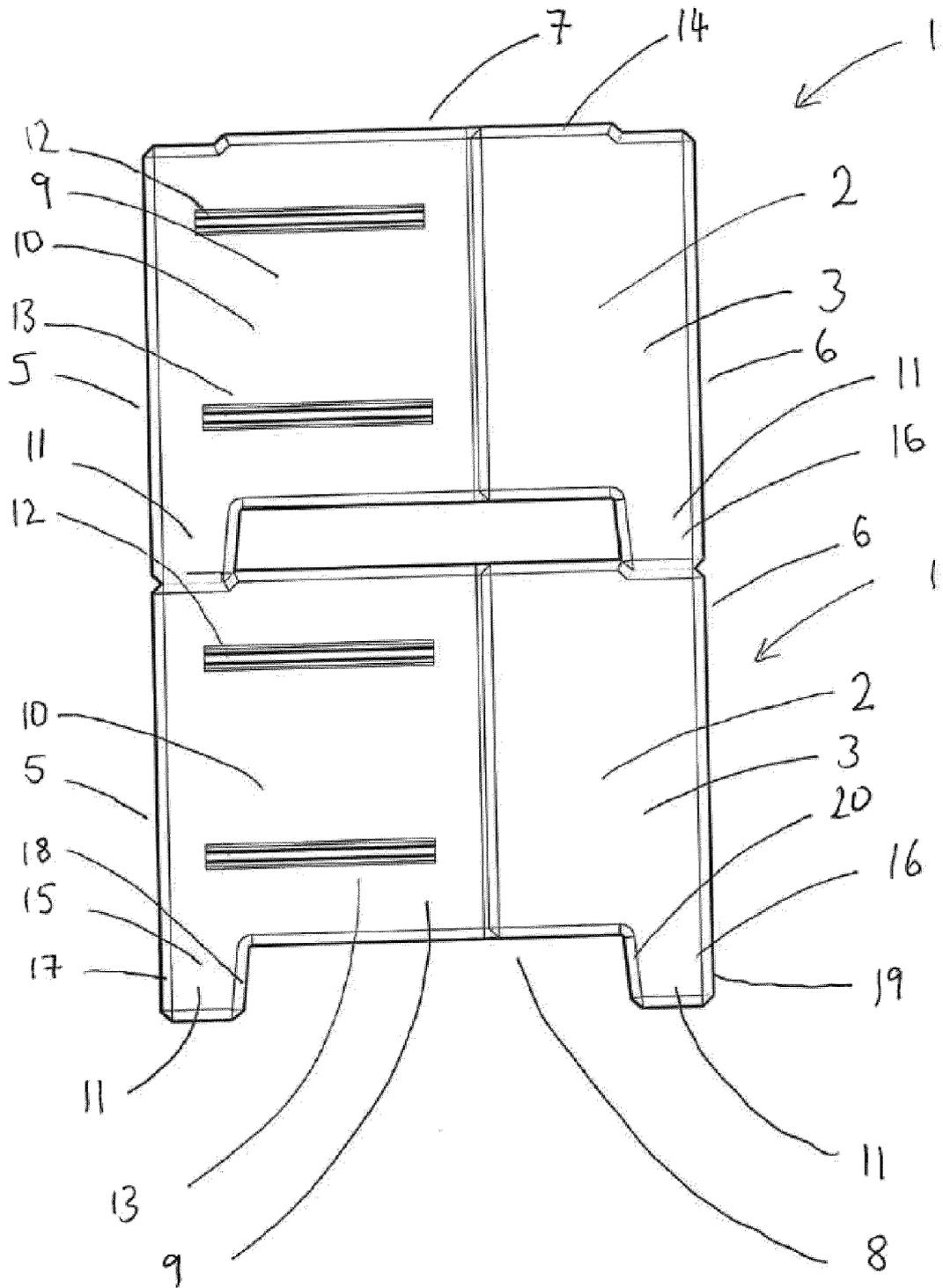


Figure 4

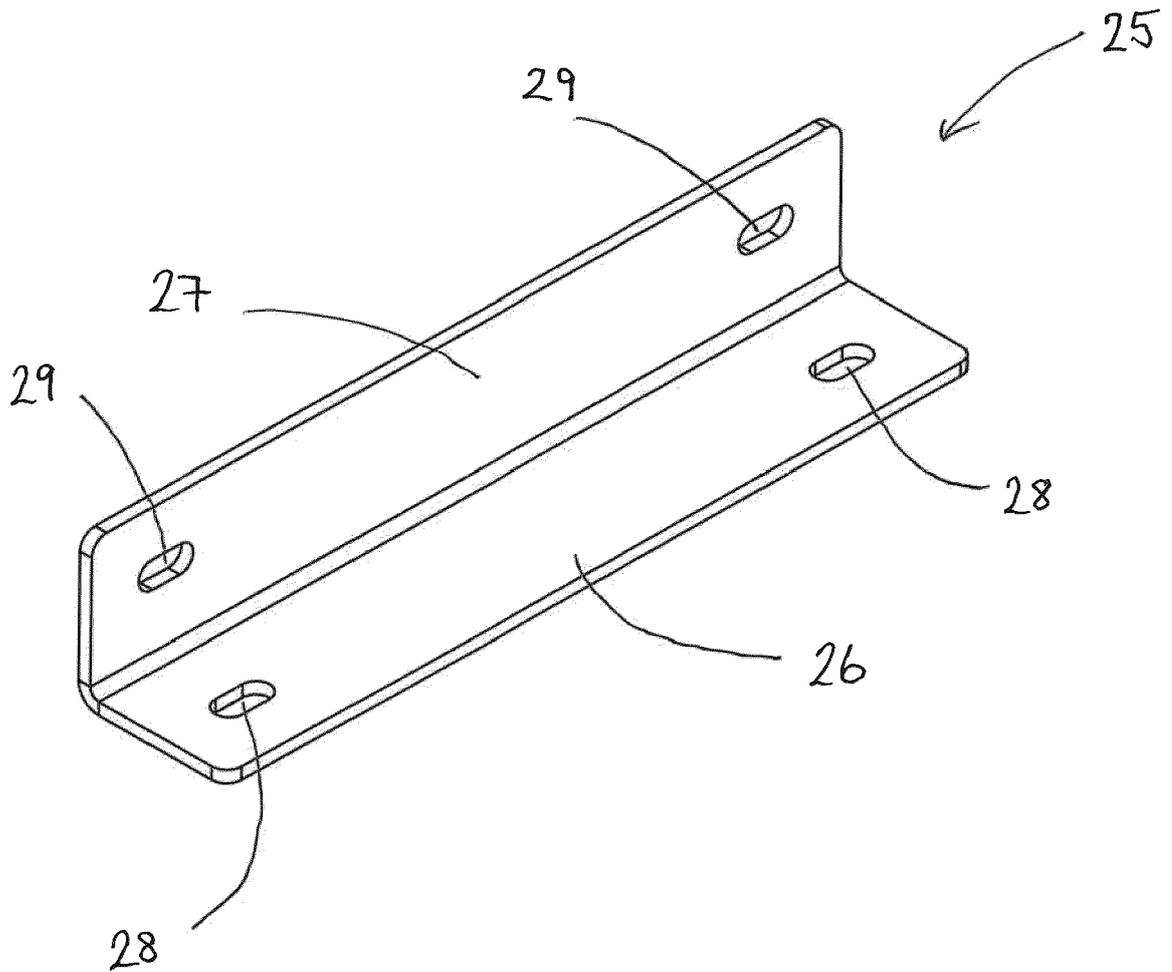


Figure 5

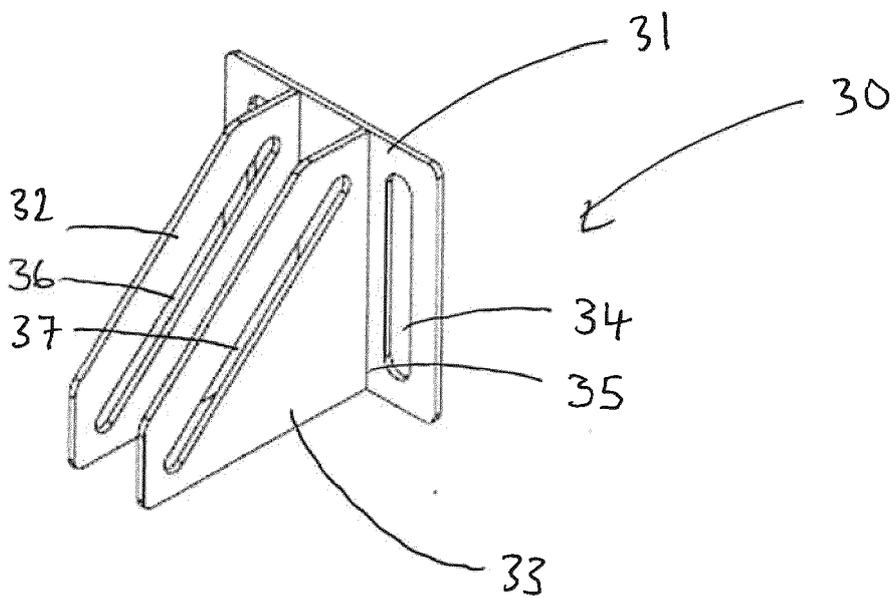
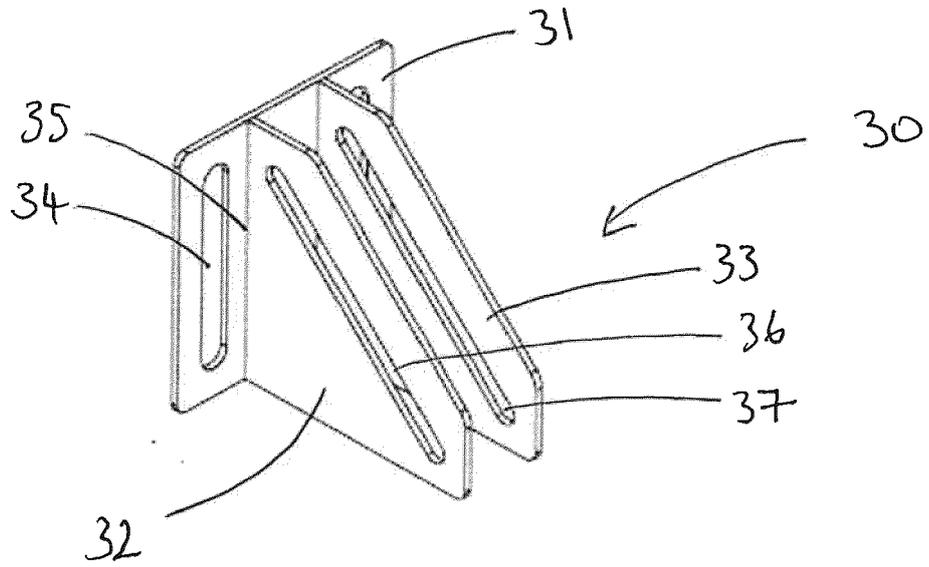


Figure 6

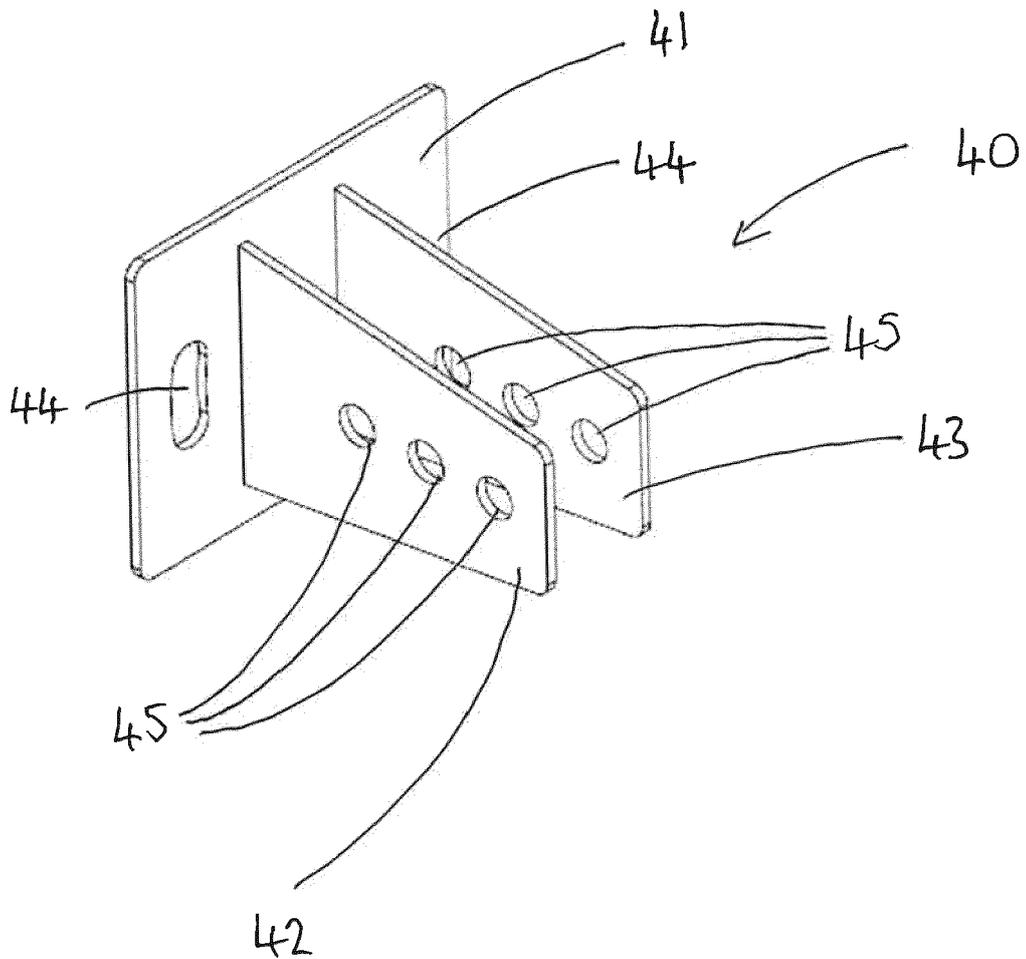


Figure 7

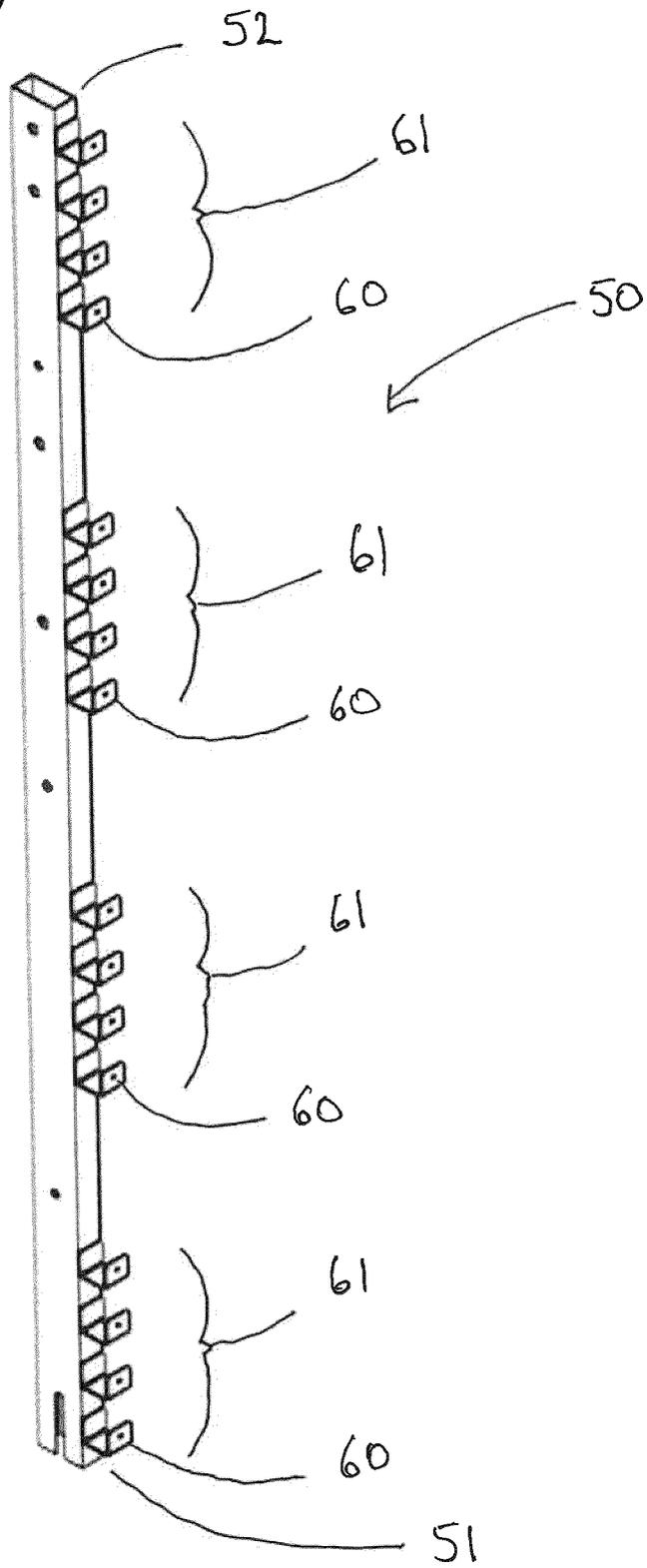


Figure 8

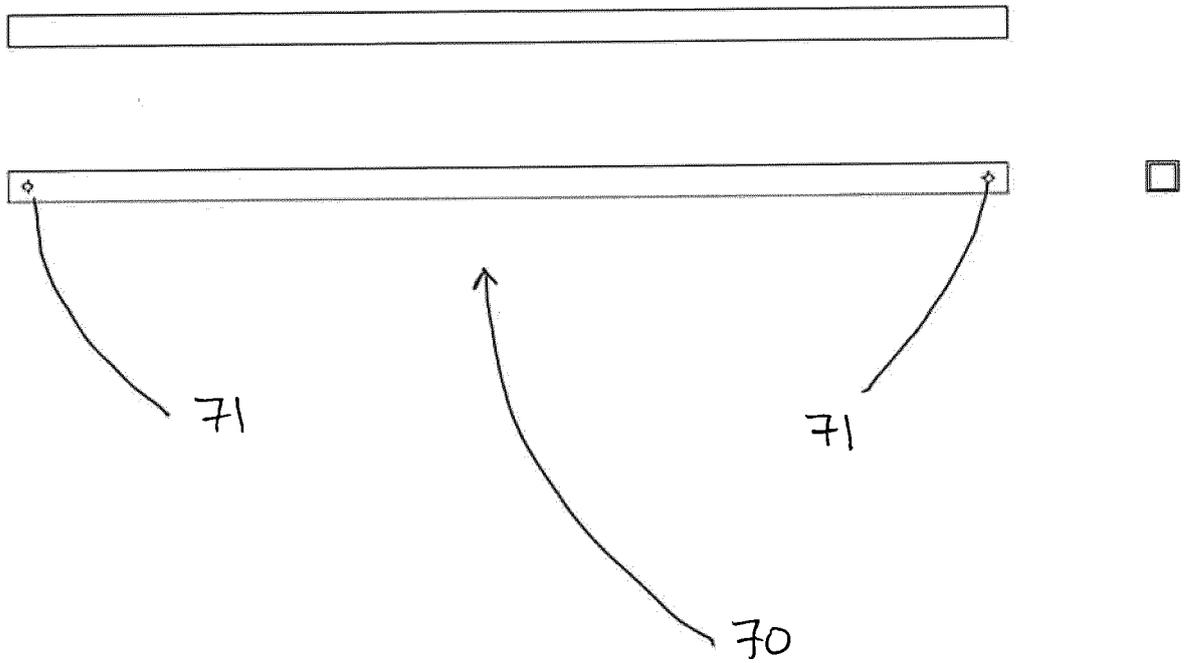


Figure 9

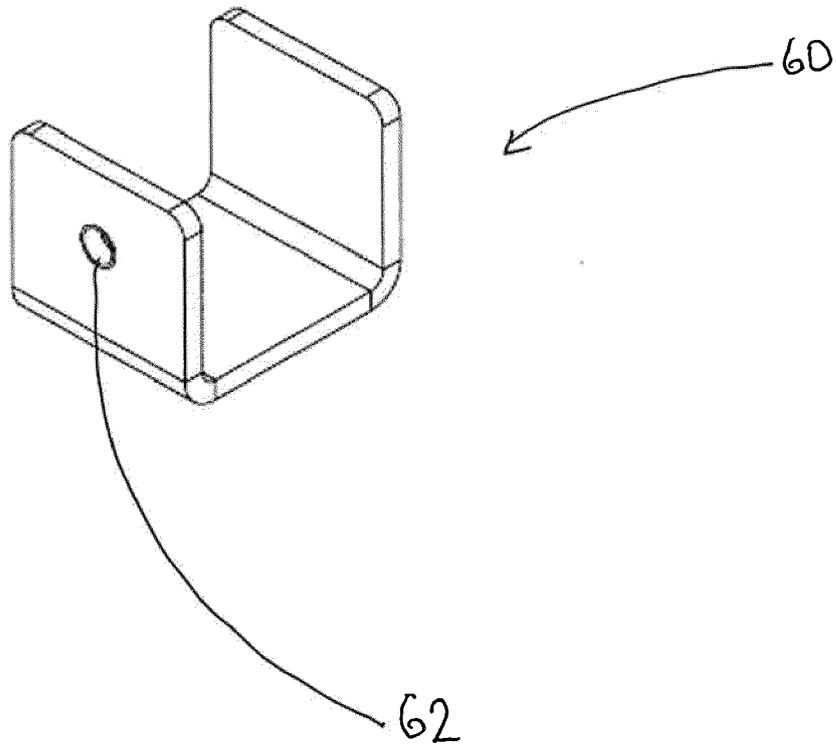


Figure 10

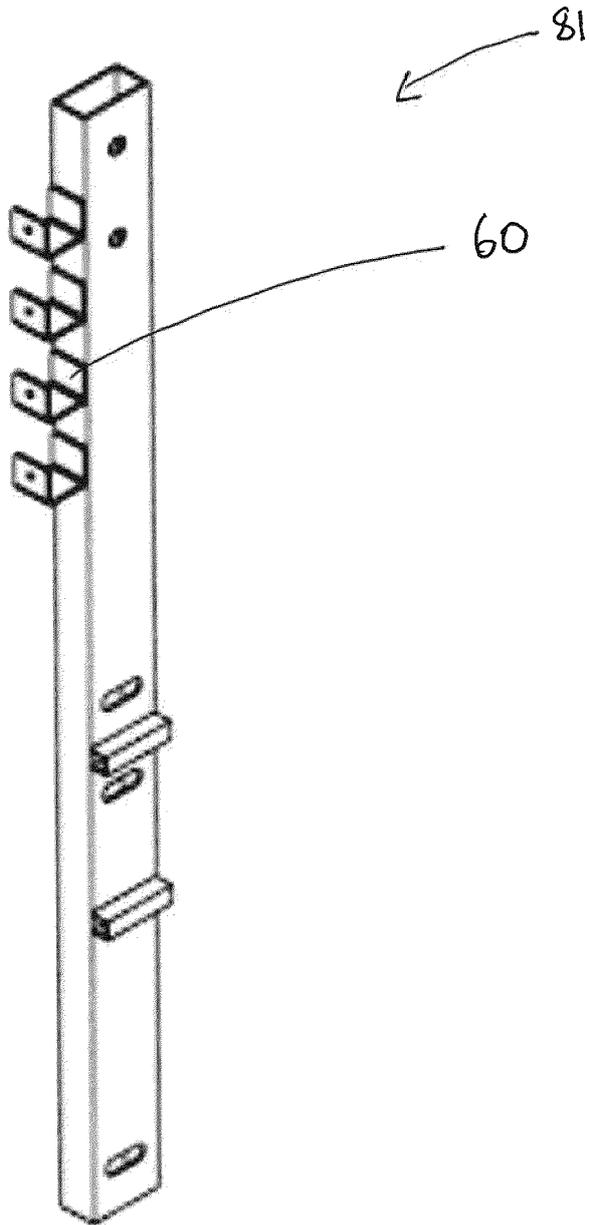
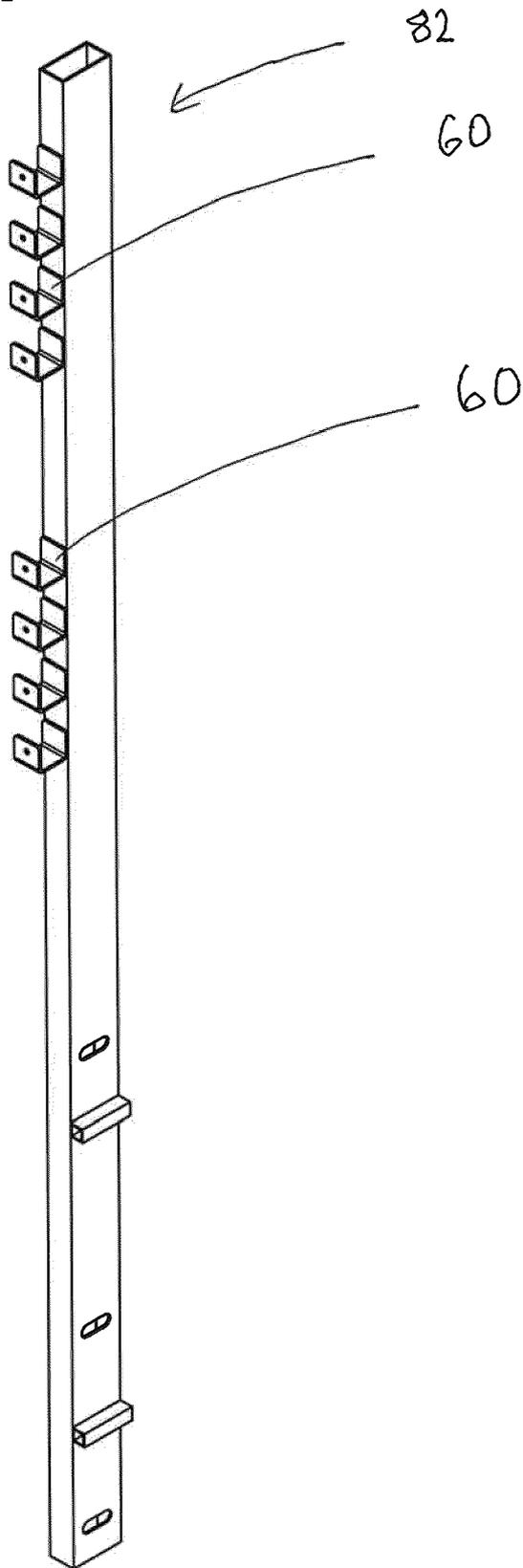


Figure 11





EUROPEAN SEARCH REPORT

Application Number
EP 22 18 9607

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			E04H E01F
The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 20 January 2023	Examiner Rosborough, John
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	

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5 This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

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