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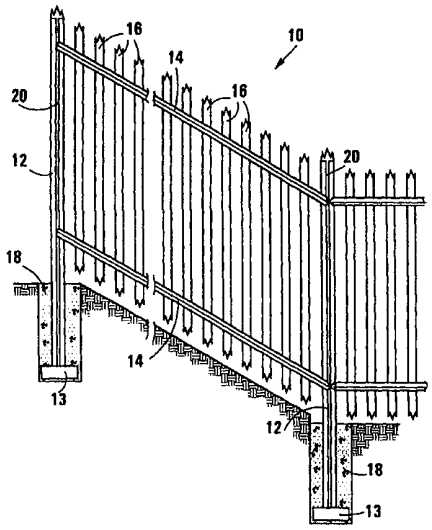

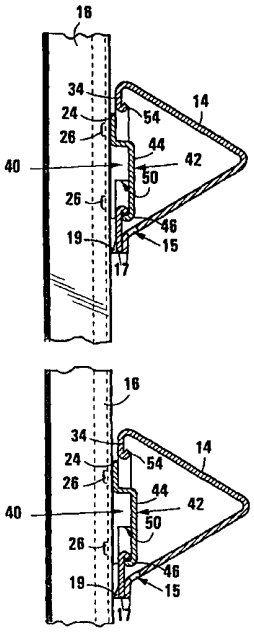

(57) Abstract

A palisade includes a pair of horizontally spaced posts, at least one rail (14) spanning between the posts and at least one elongate barrier member or pale (16) secured to the rail (14) by at least one hooked member (40) fast or integral with one of the rail and the barrier member. Typically, the hooked member (40) is fast or integral with the barrier member (16) and is engaged with a complementary formation which includes an aperture in the rail (14) through which the hooked member (40) extends.

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METHOD OF ERECTING A PALISADE

THIS INVENTION relates to fencing. In particular, it relates to a method of erecting a palisade, to a palisade, and to a palisade construction kit.

According to a first aspect of the invention, there is provided a method of erecting a palisade which includes

hooking an elongate barrier member or pale to a rail extending between horizontally spaced posts; and

securing the barrier member to the rail in its hooked position.

Hooking the barrier member to the rail may include engaging a hooked member, fast or integral with one of the barrier member and the rail, with a complementary formation on the other of the barrier member and the rail. In a preferred embodiment, the hooked member is fast or integral with the barrier member and the complementary formation includes an aperture in the rail, through which the hooked member is insertable. Engaging the hooked member with the complementary formation may thus include inserting the hooked member through the aperture.

Securing the barrier member to the rail may include catching a catch on the hooked member with a complementary catch formation on the rail thereby to inhibit withdrawal of the hooked member from the aperture. The catch of the hooked member and the complementary catch formation on the rail may be configured to render the barrier member angularly displaceable relative to the rail when the catch of the hooked member is caught by the complementary catch

formation on the rail. The barrier member may thus be capable of being secured to the rail at an obtuse angle relative to the rail.

The complementary catch formation on the rail may be in the form of a raised rim of the aperture. Catching the catch on the hooked member with the complementary catch formation on the rail may include displacing the barrier member longitudinally to force the catch of the hooked formation over the raised rim to catch behind the raised rim.

In one embodiment of the invention, hooking the barrier member to the rail includes engaging two transversely spaced oppositely disposed hooked members fast or integral with the barrier member with a complementary formation on the rail, the complementary formation on the rail including an aperture. Engaging the hooked members with the complementary formation may include forcing the hooked members closer together and inserting them through the aperture. Securing the barrier member to the rail in this case may include allowing the hooked members to move further apart to catch behind transversely spaced areas of the rail peripheral to the aperture, and locating a locking formation between the hooked members to inhibit displacement of the hooked members towards each other.

The method may include securing the rail to the posts. Securing the rail to the posts may include bolting the rail to each post. Bolting the rail to each post may include using a bolt with a rounded head configured to be rotated by a tool such as a screw driver, Allen key, socket wrench, or the like. Securing the rail to the posts may further include drilling out the head of each bolt after it has been fastened, thus inhibiting loosening of each bolt by means of a tool.

The method may include hooking a plurality of barrier members, located between adjacent posts, to a pair of vertically spaced rails extending between the posts, and securing each barrier member to both rails.

In another embodiment of the invention, hooking a barrier member to the rail includes engaging a hooked member, fast or integral with the barrier member, with a complementary formation on the rail. Securing the barrier member to the rail in its hooked position in this case includes engaging a longitudinally spaced, oppositely disposed hooked member, fast or integral with the barrier member, with a complementary formation on another rail and securing the rails to the posts. Typically, in this embodiment, the complementary formations on the rails include an aperture associated with each hooked member through which the hooked members can be inserted, so that each hooked member projects beyond a rim of its associated aperture in the rail when the rails are secured to the posts thereby to extend across an area of the rail peripheral to the aperture.

The method may include erecting the posts, e.g. by anchoring them in concrete-filled holes.

According to a second aspect of the invention, there is provided a palisade which includes

a pair of horizontally spaced posts;

at least one rail spanning between the posts; and

at least one elongate barrier member or pale secured to the rail by at least one hooked member fast or integral with one of the rail and the barrier member.

Typically, the palisade includes a plurality of longitudinally spaced apart posts, a plurality of barrier members between adjacent posts and a pair of vertically spaced parallel rails spanning between adjacent posts, each barrier member being secured to both of the rails. Each rail may be secured to its associated posts by means of a fastener, such as a bolt.

The hooked member may be engaged with a complementary formation on the other of the rail and the barrier member. In a preferred embodiment, the hooked member is fast or integral with the barrier member and

the complementary formation includes an aperture in the rail through which the hooked member extends.

The palisade may include at least two rails spanning between the posts, with two longitudinal spaced hooked members fast or integral with the barrier member. Each rail may have an aperture associated with a respective one of the hooked members through which the hooked member extends, the hooked members projecting in opposite directions beyond the rim of their associated apertures to extend across areas of their associated rails peripheral to their associated apertures.

The hooked member may have a catch, and the complementary formation may include an aperture in the rail through which the hooked member extends and a complementary catch formation on the rail which catches the catch of the hooked member, thus inhibiting withdrawal of the hooked member from the aperture.

The complementary catch formation may be defined by a raised rim of the aperture in the rail. The rim of the aperture may extend at an oblique angle away from the aperture. Instead, the rim of the aperture may extend perpendicular to a surface of the barrier member in which the aperture is located.

The aperture may be circular and the hooked member may include at least one bearing surface bearing against the circumference of the aperture, with the circumference of the aperture extending inbetween the bearing surface and the catch of the hooked member.

The catch of the hooked member and the complementary catch formation may be configured such that the barrier member can be angularly displaced relative to the rail.

In one embodiment of the invention, the palisade includes a pair of transversely spaced outwardly disposed hooked members fast or integral with the barrier member, the hooked members extending through an aperture in the rail and catching behind transversely spaced areas of the rail peripheral to the aperture.

A locking formation may be located between the outwardly disposed hooked members, inhibiting displacement of the hooked members towards each other. The rail may comprise two elongate body parts attached to each other, the aperture being located in one of the body parts, and the locking formation being defined by the other body part and projecting into the aperture.

Typically, in this embodiment, the palisade includes a pair of vertically spaced rails spanning between the posts, with a plurality of barrier members each secured to both rails, each barrier member having a pair of the outwardly disposed hooked members which secures it to one of the rails and a further pair of the outwardly disposed hooked members securing it to the other of the rails.

The barrier member may have two transversely spaced, longitudinally extending edges, each outwardly disposed hooked member being defined by a section of one of the edges bent to form a hook.

In another embodiment of the invention, the palisade typically includes a pair of vertically spaced rails spanning between the posts, with a plurality of barrier members each having two of the hooked members which are vertically spaced and which secure the barrier member to the rails, the hooked members being disposed in the same direction.

The or each hooked member may comprise a planar metal base, fast with the barrier member, with a hook formation stamped from the base to stand

proud of the base and to extend substantially parallel to the base. If the hooked member has a catch, the catch may be defined by a free end portion of the hook formation.

According to a third aspect of the invention, there is provided a palisade construction kit which includes

at least two posts;

at least one rail for securing to the posts so that it extends between the posts;

at least one elongate barrier member or pale; and

at least one hooked member fast or integral with or fastenable to the barrier member or the rail with which the barrier member can be hooked to the rail.

The other of the rail and the barrier member may have a complementary formation, with which the hooked member is engageable.

In a preferred embodiment the hooked member is fast or integral with or fastenable to the barrier member, and the complementary formation includes an aperture in the rail, the hooked member being insertable through the aperture.

The hooked member may have a catch, and the complementary formation may include a complementary catch formation on the rail for catching the catch of the hooked member when the hooked member is inserted through the aperture in the rail. The complementary catch formation may be as hereinbefore described.

The aperture may be circular and the hooked member may include at least one bearing surface for bearing against the circumference of the aperture, the circumference of the aperture thus extending inbetween the bearing

surface and the catch of the hooked member when the hooked member is inserted through the aperture in the rail.

The catch of the hooked member and the complementary catch formation may be configured such that the barrier member can be angularly displaced relative to the rail when the hooked member is inserted through the aperture and the catch of the hooked member is caught by the complementary catch formation on the rail.

The palisade construction kit, in one embodiment, includes a pair of longitudinally spaced hooked members fast or integral with the barrier member, the hooked members being oppositely disposed.

In another embodiment, the barrier member has at least one pair of transversely spaced outwardly disposed hooked members fast or integral therewith. In this embodiment, the rail may comprise two elongate body parts which are attachable to each other, the aperture being located in one of the body parts, and the other body part defining a locking formation which projects into the aperture when the body parts are attached, the locking formation inhibiting displacement of the hooked members towards each other after they have been inserted through the aperture. In this embodiment, the barrier member may have two transversely spaced, longitudinally extending edges, each outwardly disposed hooked member being defined by a section of one of the edges bent to form a hook.

The hooked member may be as hereinbefore described.

In yet another embodiment of the invention, the barrier member may have a pair of longitudinally spaced hooked members fast or integral with the barrier member, the hooked members being disposed in the same direction.

Typically, the kit includes a plurality of posts, a plurality of rails and a plurality of barrier members and hooked members. The kit may further include a conduit for electrical wiring. The conduit may be of a synthetic plastics or polymeric material and may be a conventional wiring conduit.

Each post, rail, barrier member and hooked member may be of steel and may be pre-coated with a rust-resistant coating. In one embodiment of the invention, these components are of stainless steel. In another embodiment of the invention, they are of a rigid synthetic plastics or polymeric material. In yet another embodiment of the invention, they are galvanized.

Each rail may be a hollow cylindrical rail, e.g. triangular or square in cross-section. Each rail and each post may have apertures for receiving a fastener, such as a bolt, to secure the rails to the posts. Each rail may have apertures in register with the fastener apertures, for receiving a tool to fasten each fastener with.

The invention will now be described, by way of example, with reference to the accompanying diagrammatic drawings, in which:

Figure 1 shows a rear elevational view of a portion of a palisade in accordance with the invention;

Figure 2 shows an elevational partially cut away view of portions of a barrier member and portions of a pair of rails of a palisade in accordance with the invention;

Figure 3 shows a sectioned side view of the portions of the barrier member and rails of Figure 2, taken at III-III in Figure 2;

Figure 4 shows a sectioned plan view of the barrier member and the portions of the rails of Figure 2, taken at IV-IV in Figure 2;

Figure 5 shows an elevational partially cut away view of portions of the barrier member and portions of a pair of rails of another embodiment of a palisade in accordance with the invention;

Figure 6 shows a sectional side view of the portions of the barrier member and rails of Figure 5 taken at VI-VI in Figure 5;

Figure 7 shows a plan view of a hooked member;

Figure 8 shows a sectioned side view of the hooked member of Figure 7, taken at VIII-VIII in Figure 7;

Figure 9 shows a partially cut away plan view of another embodiment of a hooked member inserted in an aperture in a rail;

Figure 10 shows a sectioned side view of the hooked member of Figure 9, taken at X-X in Figure 9;

Figure 11 shows an elevational view of another embodiment of a hooked member and a barrier member;

Figure 12 shows a sectioned plan view of the hooked member and barrier member of Figure 11, taken at XII-XII in Figure 11;

Figure 13 shows a sectioned elevational side view of another embodiment of a rail;

Figure 14 shows a sectioned elevational side view of another embodiment of a rail and barrier member; and

Figure 15 shows a sectioned plan view of the barrier member and rail of Figure 14.

Referring to Figure 1 of the drawings, reference numeral 10 generally indicates a portion of a palisade in accordance with the invention. The palisade 10 includes a pair of hollow posts 12, a pair of parallel rails 14 spanning between the posts 12, and a plurality of elongate corrugated barrier members or pales 16 having spiked or forked ends secured to the rails 14. As will be appreciated, although only two posts 12 are shown in Figure 1, the palisade 10 typically includes a plurality of longitudinally spaced apart posts 12, a pair of vertically spaced apart rails 14 spanning between adjacent posts 12, and a plurality of barrier members 16 secured to the rails 14 between adjacent posts 12.

Each post 12 has a base 13 and is anchored in a hole in the ground filled with concrete 18, so that the posts 12 are substantially vertical. Each post 12 defines a vertically extending slot 20, the purpose of which is described in more detail below. Each post 12 has a spiked or forked upper end, and is triangular in cross section.

Each rail 14 is hollow and is triangular in cross-section (see Figure 3). Each rail 14 is secured at its ends to the posts 12 by means of bolts and nuts (not shown). The ends of each rail 14 may be rounded or pointed to prevent interference between adjacent rails 14 when they are angularly disposed relative to each other. Apertures (not shown) which are in register are provided in each rail 14 and in each post 12 for the bolts. Further apertures (not shown) are also provided in the rails 14 in register with each aperture which receives a bolt. The purpose of the further apertures is discussed in more detail below. Each bolt-receiving aperture in the posts 12 has a raised peripheral area (not shown) acting as a spacer between the posts 12 and the rails 14. If desired, electrical wiring conduits (not shown) can be located inside the hollow rails 14. The conduits can be used to house electrical wiring for an automated gate, lights or other electrical equipment.

Referring to Figures 2, 3 and 4 of the drawings, each barrier member 16 is secured to both rails 14 by means of a pair of longitudinally spaced apart hooked members 22 fast with the barrier member 16. Each hooked member 22 includes a square base 24 having four feet 26 arranged in a square, and is press riveted at its four feet 26, to the barrier member 16. Each hook member 22 also includes a hook formation 28, defined by a stamped out portion of the base 24. The hook formations 28 of the hooked members 22 face in opposite directions, one facing upwardly and the other one facing downwardly. Each hook formation 28 has an upturned edge 30 (see Figure 3). The hook formation 28 facing upwardly has a longer upturned edge 30 than the hook formation 28 facing downwardly. The upturned edges 30 facilitate assembly or erection of the palisade 10.

A plurality of longitudinally spaced apart apertures 32 (only two of which are shown, one in each rail 14), each one associated with one of the hook formations 28 on the barrier members 16, is provided in a wall 34 of each triangular rail 14. The wall 34 faces the barrier members 16. Each hook formation 28 extends through its associated aperture 32 and projects a substantial distance beyond a rim of its associated aperture 32, thus securing each barrier member 16 to the rails 14. It is to be appreciated that the spacing between the apertures 32 can be increased, to compensate for the effect of rails 14 which slope, and thus to obtain the same spacing between the barrier members 16 which are on a sloping portion of the palisade 10 and the barrier members 16 which are on a generally horizontal portion of the palisade 10 (see Figure 1).

A drainage aperture 15 is provided in each rail 14 below each aperture 32.

Figures 5, 6, 7 and 8 of the drawings illustrate another arrangement for securing the barrier members 16 to the rails 14. In this arrangement, each barrier member 16 has a pair of hooked members, which are hereinafter referred to as hooked clipping members 40, fast with the barrier member 16. The hooked clipping members 40 are similar to the hooked members 22, and unless otherwise indicated, the same reference numerals used above are used to indicate the same or similar parts or features.

Each hooked clipping member 40 includes a raised hooked clipping formation 42 stamped from the base 24. Each hooked clipping formation 42 comprises a generally circular, planar body 44 which is substantially parallel to the base 24. The body 44 includes a lip defining a catch 46.

The body 44 also includes a pair of shoulders 48, defining a pair of bearing surfaces 50 (see Figures 7 and 8).

In this arrangement, the rails 14 define apertures 52 in their walls 34, the apertures 52 each having an inwardly turned rim 54 which extends at an oblique angle of about 45° inwardly into the interior of the hollow rail 14 and away from the aperture 52. The rim 54 thus defines a complementary catch formation for the catch 46. As can be clearly seen in Figure 5, the bearing surfaces 50 of each hooked clipping member 40 bear against a periphery of the aperture 52, with the rim 54 extending or curving inbetween the bearing surfaces 50 and the catch 46, and with the catch 46 being engaged with or caught behind the rim 54.

Referring to Figures 9 and 10, another embodiment of a hooked clipping member is generally indicated by reference numeral 100, and unless otherwise indicated, the same reference numerals used above for the hooked clipping member 40 are used to indicate the same or similar parts or features.

The catch 46 of the hooked clipping member 100 includes a leading portion 102 extending at an oblique angle relative to the planar body 44. The rim 54 of the aperture 52 is however perpendicular to the wall 34 of the rail 14. Weakening apertures 104 are provided in the planar body 44. The catch 46 has an internal radius which is the same as an external radius of the rim 54.

When the catch 46 of the hooked clipping member 100 is displaced towards the rim 54 in the direction indicated by arrow 106, the leading portion 102 bears against the rim 54 and the planar body 44 resiliently bends to allow the catch 46 to clip over the rim 54. Bending of the planar body 44 is facilitated by the apertures 104. It is to be appreciated that the number, position and size of the weakening apertures 104 can be varied to increase or decrease the ease with which the planar body 44 bends to allow the catch 46 to clip over the rim 54.

Referring to Figures 11 and 12, another embodiment of a hooked clipping member is generally indicated by reference numeral 200. The hooked

clipping member 200 is similar to the hooked clipping member 100, and unless otherwise indicated, the same reference numerals used for the hooked clipping member 100 are used for the hooked clipping member 200 to indicate the same or similar parts or features. Similarly, another embodiment of a barrier member or pale is indicated by reference numeral 202.

Unlike the hooked clipping members 40,100 which have feet 26 press riveted to the barrier members 16, the hooked clipping member 200 has four apertures 204 which are used to fasten the hooked clipping member 200 to the barrier member 202. Vertically extending opposed edges 206 of the barrier member 202 are folded back on themselves to define vertically extending channels receiving opposed edges of the base 24 of the hooked clipping member 200. Where the edges 206 pass over the apertures 204 in the base 24, they are deformed to project into the apertures 204 (see Figure 12), thus fastening the hooked clipping member 200 to the barrier member 202.

As will be appreciated, the hooked members 22 and the hooked clipping members 40, 100, 200, in combination with their associated apertures 32 or 52 in the rails 14, allow the barrier members 16, 202 to be disposed at angles other than 90° relative to the rails 14, as can be seen in Figure 1.

Figure 6 also illustrates one constructional method of strengthening or stiffening the rails 14. As shown in Figure 6, when the rails 14 are formed, a pair of lips 17 are created. Spaced apart cuts are made perpendicular to a lower edge of the abutting lips 17, and a portion 19 of the lips 17 between the cuts are bent slightly out of the plane of the lips 17.

The invention extends to a palisade construction kit which includes at least two posts 12, at least one rail 14, at least one barrier member or pale 16, 202, and at least one hooked member 22 or hooked clipping member 40, 100, 200 fast or integral with or fastenable to the barrier member 16, 202. Typically, the kit includes a plurality of posts 12, rails 14, barrier members 16,

202 and hooked members 22 or hooked clipping members 40, 100, 200 fast or integral with the barrier members 16, 202.

Each post 12, rail 14, barrier member 16, 202 and hooked member 22, or hooked clipping member 40, 100, 200 is pre-coated with a rust-resistant coating or paint. In another embodiment of the invention, each component of the kit is galvanized. The kit typically also includes fasteners such as bolts and nuts, for securing the rails 14 to the posts 12.

One method of erecting the palisade 10 includes anchoring the posts 12 by means of concrete 18 in holes in the ground, bolting one of the rails 14, which is a lower rail 14, to the posts 12, inserting the hooked formation 28 of the hook member 22, which is a lower hook member 22 on the barrier member 16, through the aperture 32 in the rail 14, inserting the hook formation 28 of the hooked member 22, which is an upper hooked member 22 of the barrier member 16, through the aperture 32 in the upper rail 14, thus securing the barrier member 16 to the rails 14 as shown in Figures 2 and 3, and bolting the upper rail 14 to the posts 12.

Another method of erecting the palisade 10, includes first bolting both rails 14 to the posts 12, and then inserting both hooked clipping formations 42 of the hooked clipping members 40, 100 through the apertures 52 in the rails 14, and displacing the barrier member 16 downwardly so that the catches 46 are caught behind the rims 54, and the bearing surfaces 50 bear against peripheries of the apertures 52, thus securing the barrier member 16 to the rails 14 as shown in Figures 5 and 6.

In both methods, the slots 20 in the posts 12 are used to position nuts inside the posts 12 in register with the bolt-receiving apertures in the posts 12, so that a bolt can be engaged with each nut, thereby to bolt the rails 14 to the posts 12. The slots 20 can then be closed with a closure member (not shown), e.g. a strip of a synthetic plastics or polymeric material. The spacers

formed by the raised peripheral areas of the apertures in the posts 12 allow such a strip to be inserted between the posts 12 and the rails 14.

Typically, the bolts used to bolt the rails 14 to the posts 12 have round heads with screw driver receiving formations. After the rails 14 have been bolted to the posts 12, a drill bit is inserted through the apertures in the rail 14 in register with each bolt-receiving aperture, and the head of each bolt is drilled out to inhibit unscrewing of the bolts.

Referring to Figure 13, another embodiment of a rail is generally indicated by reference numeral 300. Unless otherwise indicated, the same reference numerals used for the rail 14 are used with the rail 300 to indicate the same or similar parts or features.

The rail 300 comprises two elongate body components 302, 304. The body component 302 defines the wall 34 which faces the barrier members 16, 202 and which has the apertures 52. Drainage apertures are provided in the rail 300 by providing spaced apart cuts in a lower edge of the body component 304 and bending a portion 306 between the cuts slightly out of the plane of the lower edge of the body component 304. An upper edge of the body component 302 projects over an upper edge of the body component 304, thus inhibiting ingress of water into a space between the body components 302, 304.

The body components 302, 304 are attached or fastened to each other with the bolts used to bolt the rail 300 to the posts 12, as described above. When it is desired to get access to the hooked clipping members 40, 100, 200, the body component 304 can be removed easily to provide access.

Referring to Figures 14 and 15, another embodiment of a rail 400 and a barrier member 402 are shown. The rail 400 is similar to the rail 300, comprising two elongate body components 404, 406. The body components 404, 406 are fastened together by means of self-tapping screws 408. The body

component 404 defines the wall 34 which faces the barrier member 402 and which has the apertures 52.

Unless otherwise indicated, the same reference numerals used for the rail 300 are used to indicate the same or similar parts or features of the rail 400.

The body component 404 defines a plurality of spikes 410, only one of which is shown in Figure 14. Although the spike 410 in Figure 14 is shown in register with the barrier member 402, the spikes 410 are typically located between adjacent barrier members 402.

The barrier member 402 is similar to the barrier member 202. Thus, vertically extending transversely spaced opposed edges 412 of the barrier member 402 are curled back on themselves to define vertically extending channels. Where the barrier member 402 crosses the rail 400, two spaced cuts are provided in each edge 412 and portions of the edges 412 between the spaced cuts are bent outwards again, away from the barrier member 402, to define hooked members 414. The hooked members 414 extend through the aperture 52 in the rail 400 and catch behind transversely spaced areas 416 of the rail 400 peripheral to the aperture 52.

Where the rail 400 crosses the barrier member 402, the body component 406 defines a locking formation 418 which extends through the aperture 52 and which is located between the hook members 414, thus inhibiting displacement of the hook members 414 towards each other.

The barrier member 402 is thus hooked to the rail 400 by forcing the hooked members 414 closer together and inserting them through the aperture 52. The barrier member 402 is then secured to the rail 400 by allowing the hook members 414 to move further apart to catch behind the areas 416 of the rail 400, and by screwing the body component 406 to the body component

404 such that the locking formation 418 extends into the aperture 52 and is located between the hooked members 414.

It is an advantage of the palisade 10, as illustrated, that the hollow rails enclose the hooked formations or the hooked clipping formations, thus inhibiting removal of a barrier member 16.

It is a further advantage of the palisade 10, as illustrated, that it can be supplied in kit form, and that it subsequently can be erected without any welding.

It is another advantage of the palisade 10, as illustrated, that all the components are pre-coated with a rust-resistant coating, or are galvanized.

It is yet an even further advantage of the palisade 10, as illustrated, that it can be erected on a sloping surface, since the securing arrangements between the barrier members and the rails, as well as between the rails and the posts, allow an angular disposition also other than 90° between the rails on the one hand and the posts and barrier members on the other hand.

It is yet another advantage of the palisade 10, as illustrated, that it requires no welding to construct or erect.

CLAIMS

1. A method of erecting a palisade which includes

hooking an elongate barrier member or pale to a rail extending between horizontally spaced posts; and

securing the barrier member to the rail in its hooked position.

2. A method as claimed in claim 1, in which hooking the barrier member to the rail includes engaging a hooked member, fast or integral with one of the barrier member and the rail, with a complementary formation on the other of the barrier member and the rail.

3. A method as claimed in claim 2, in which the hooked member is fast or integral with the barrier member and in which the complementary formation includes an aperture in the rail, through which the hooked member is insertable, engaging the hooked member with the complementary formation thus including inserting the hooked member through the aperture.

4. A method as claimed in claim 3, in which securing the barrier member to the rail includes catching a catch on the hooked member with a complementary catch formation on the rail thereby to inhibit withdrawal of the hooked member from the aperture.

5. A method as claimed in claim 4, in which the catch of the hooked member and the complementary catch formation on the rail are configured to render the barrier member angularly displaceable relative to the rail when the catch of the hooked member is caught by the complementary catch formation on the rail, the barrier member thus being capable of being secured to the rail at an obtuse angle relative to the rail.

6. A method as claimed in claim 4 or claim 5, in which the complementary catch formation on the rail is in the form of a raised rim of the aperture, and in

which catching the catch on the hooked member with the complementary catch formation on the rail includes displacing the barrier member longitudinally to force the catch of the hooked formation over the raised rim to catch behind the raised rim.

7. A method as claimed in claim 1, in which hooking the barrier member to the rail includes engaging two transversely spaced oppositely disposed hooked members fast or integral with the barrier member with a complementary formation on the rail, the complementary formation on the rail including an aperture, engaging the hooked members with the complementary formation including forcing the hooked members closer together and inserting them through the aperture, and in which securing the barrier member to the rail includes allowing the hooked members to move further apart to catch behind transversely spaced areas of the rail peripheral to the aperture, and locating a locking formation between the hooked members to inhibit displacement of the hooked members towards each other.

8. A method as claimed in any one of claims 1 to 7 inclusive, which includes hooking a plurality of barrier members, located between adjacent posts, to a pair of vertically spaced rails extending between the posts, and securing each barrier member to both rails.

9. A method as claimed in claim 1, in which hooking a barrier member to the rail includes engaging a hooked member, fast or integral with the barrier member, with a complementary formation on the rail, and in which securing the barrier member to the rail in its hooked position includes engaging a longitudinally spaced, oppositely disposed hooked member, fast or integral with the barrier member, with a complementary formation on another rail and securing the rails to the posts.

10. A method as claimed in claim 9, in which the complementary formations on the rails include an aperture associated with each hooked member through

which the hooked members can be inserted, so that each hooked member projects beyond a rim of its associated aperture in the rail when the rails are secured to the posts thereby to extend across an area of the rail peripheral to the aperture.

11. A palisade which includes

a pair of horizontally spaced posts;

at least one rail spanning between the posts; and

at least one elongate barrier member or pale secured to the rail by at least one hooked member fast or integral with one of the rail and the barrier member.

12. A palisade as claimed in claim 11, in which the hooked member is engaged with a complementary formation on the other of the rail and the barrier member.

13. A palisade as claimed in claim 12, in which the hooked member is fast or integral with the barrier member and the complementary formation includes an aperture in the rail through which the hooked member extends.

14. A palisade as claimed in claim 13, which includes at least two rails spanning between the posts, with two longitudinal spaced hooked members fast or integral with the barrier member, each rail having an aperture associated with a respective one of the hooked members through which the hooked member extends, the hooked members projecting in opposite directions beyond the rim of their associated apertures to extend across areas of their associated rails peripheral to their associated apertures.

15. A palisade as claimed in claim 12, in which the hooked member has a catch, and in which the complementary formation includes an aperture in the rail through which the hooked member extends and a complementary catch formation on the rail which catches the catch of the hooked member, thus inhibiting withdrawal of the hooked member from the aperture.

16. A palisade as claimed in claim 15, in which the complementary catch formation is defined by a raised rim of the aperture in the rail.

17. A palisade as claimed in claim 16, in which the rim of the aperture extends at an oblique angle away from the aperture.

18. A palisade as claimed in claim 16, in which the rim of the aperture extends perpendicular to a surface of the barrier member in which the aperture is located.

19. A palisade as claimed in any one of claims 15 to 18 inclusive, in which the aperture is circular and the hooked member includes at least one bearing surface bearing against the circumference of the aperture, with the circumference of the aperture extending inbetween the bearing surface and the catch of the hooked member.

20. A palisade as claimed in any one of claims 15 to 19 inclusive, in which the catch of the hooked member and the complementary catch formation are configured such that the barrier member can be angularly displaced relative to the rail.

21. A palisade as claimed in claim 11, which includes a pair of transversely spaced outwardly disposed hooked members fast or integral with the barrier member, the hooked members extending through an aperture in the rail and catching behind transversely spaced areas of the rail peripheral to the aperture.

22. A palisade as claimed in claim 21, in which a locking formation is located between the outwardly disposed hooked members, inhibiting displacement of the hooked members towards each other.

23. A palisade as claimed in claim 22, in which the rail comprises two elongate body parts attached to each other, the aperture being located in one of

the body parts, and the locking formation being defined by the other body part and projecting into the aperture.

24. A palisade as claimed in any one of claims 21 to 23 inclusive, which includes a pair of vertically spaced rails spanning between the posts, with a plurality of barrier members each secured to both rails, each barrier member having a pair of the outwardly disposed hooked members which secures it to one of the rails and a further pair of the outwardly disposed hooked members securing it to the other of the rails.

25. A palisade as claimed in any one of claims 11 to 24 inclusive, in which the at least one rail is hollow.

26. A palisade as claimed in any one of claims 11 to 13 or 15 to 19 inclusive, which includes a pair of vertically spaced rails spanning between the posts, with a plurality of barrier members each having two of the hooked members which are vertically spaced and which secure the barrier member to the rails, the hooked members being disposed in the same direction.

27. A palisade as claimed in any one of claims 13 to 20 inclusive, in which the hooked member comprises a planar metal base, fast with the barrier member, with a hook formation stamped from the base to stand proud of the base and to extend substantially parallel to the base.

28. A palisade as claimed in claim 15, in which the hooked member comprises a planar metal base, fast with the barrier member, with a hook formation stamped from the base to stand proud of the base and to extend substantially parallel to the base, the catch of the hooked member being defined by a free end portion of the hook formation.

29. A palisade as claimed in any one of claims 21 to 24 inclusive, in which the barrier member has two transversely spaced, longitudinally extending edges,

each outwardly disposed hooked member being defined by a section of one of the edges bent to form a hook.

30. A palisade construction kit which includes

at least two posts;

at least one rail for securing to the posts so that it extends between the posts;

at least one elongate barrier member or pale; and

at least one hooked member fast or integral with or fastenable to the barrier member or the rail with which the barrier member can be hooked to the rail.

31. A palisade construction kit as claimed in claim 30, in which the other of the rail and the barrier member has a complementary formation, with which the hooked member is engageable.

32. A palisade construction kit as claimed in claim 31, in which the hooked member is fast or integral with or fastenable to the barrier member, and the complementary formation includes an aperture in the rail, the hooked member being insertable through the aperture.

33. A palisade construction kit as claimed in claim 32, in which the hooked member has a catch, and in which the complementary formation includes a complementary catch formation on the rail for catching the catch of the hooked member when the hooked member is inserted through the aperture in the rail.

34. A palisade construction kit as claimed in claim 33, in which the complementary catch formation is defined by a raised rim of the aperture in the rail.

35. A palisade construction kit as claimed in claim 34, in which the rim of the aperture extends at an oblique angle away from the aperture.

36. A palisade construction kit as claimed in claim 34, in which the rim of the aperture extends perpendicular to a surface of the barrier member in which the aperture is located.

37. A palisade construction kit as claimed in any one of claims 33 to 36 inclusive, in which the aperture is circular and the hooked member includes at least one bearing surface for bearing against the circumference of the aperture, the circumference of the aperture thus extending inbetween the bearing surface and the catch of the hooked member when the hooked member is inserted through the aperture in the rail.

38. A palisade construction kit as claimed in any one of claims 33 to 37 inclusive, in which the catch of the hooked member and the complementary catch formation are configured such that the barrier member can be angularly displaced relative to the rail when the hooked member is inserted through the aperture and the catch of the hooked member is caught by the complementary catch formation on the rail.

39. A palisade construction kit as claimed in any one of claims 30 to 32 inclusive, which includes a pair of longitudinally spaced hooked members fast or integral with the barrier member, the hooked members being oppositely disposed.

40. A palisade construction kit as claimed in claim 32, in which the barrier member has at least one pair of transversely spaced outwardly disposed hooked members fast or integral therewith.

41. A palisade construction kit as claimed in claim 40, in which the rail comprises two elongate body parts which are attachable to each other, the aperture being located in one of the body parts, and the other body part defining a locking formation which projects into the aperture when the body parts are attached, the locking formation inhibiting displacement of the hooked members towards each other after they have been inserted through the aperture.

42. A palisade construction as claimed in any one of claims 30 to 41 inclusive, in which the at least one rail is hollow.

43. A palisade construction kit as claimed in any one of claims 30 to 39 inclusive, in which the hooked member comprises a planar metal base, with a hook formation stamped from the base to stand proud of the base and to extend substantially parallel to the base.

44. A palisade construction kit as claimed in claim 33, in which the hooked member comprises a planar metal base with a hook formation stamped from the base to stand proud of the base and to extend substantially parallel to the base, the catch of the hooked member being defined by a free end portion of the hook formation.

45. A palisade construction kit as claimed in claim 40 or claim 41, in which the barrier member has two transversely spaced, longitudinally extending edges, each outwardly disposed hooked member being defined by a section of one of the edges bent to form a hook.

46. A palisade construction kit as claimed in any one of claims 30 to 38 inclusive, which includes a pair of longitudinally spaced hooked members fast or integral with the barrier member, the hooked members being disposed in the same direction.

47. A method of erecting a palisade as claimed in claim 1, substantially as herein described and illustrated.

48. A palisade as claimed in claim 11, substantially as herein described and illustrated.

49. A palisade construction kit as claimed in claim 30, substantially as herein described and illustrated.

50. A new method of erecting a palisade, a new palisade, or a new palisade construction kit, substantially as herein described.

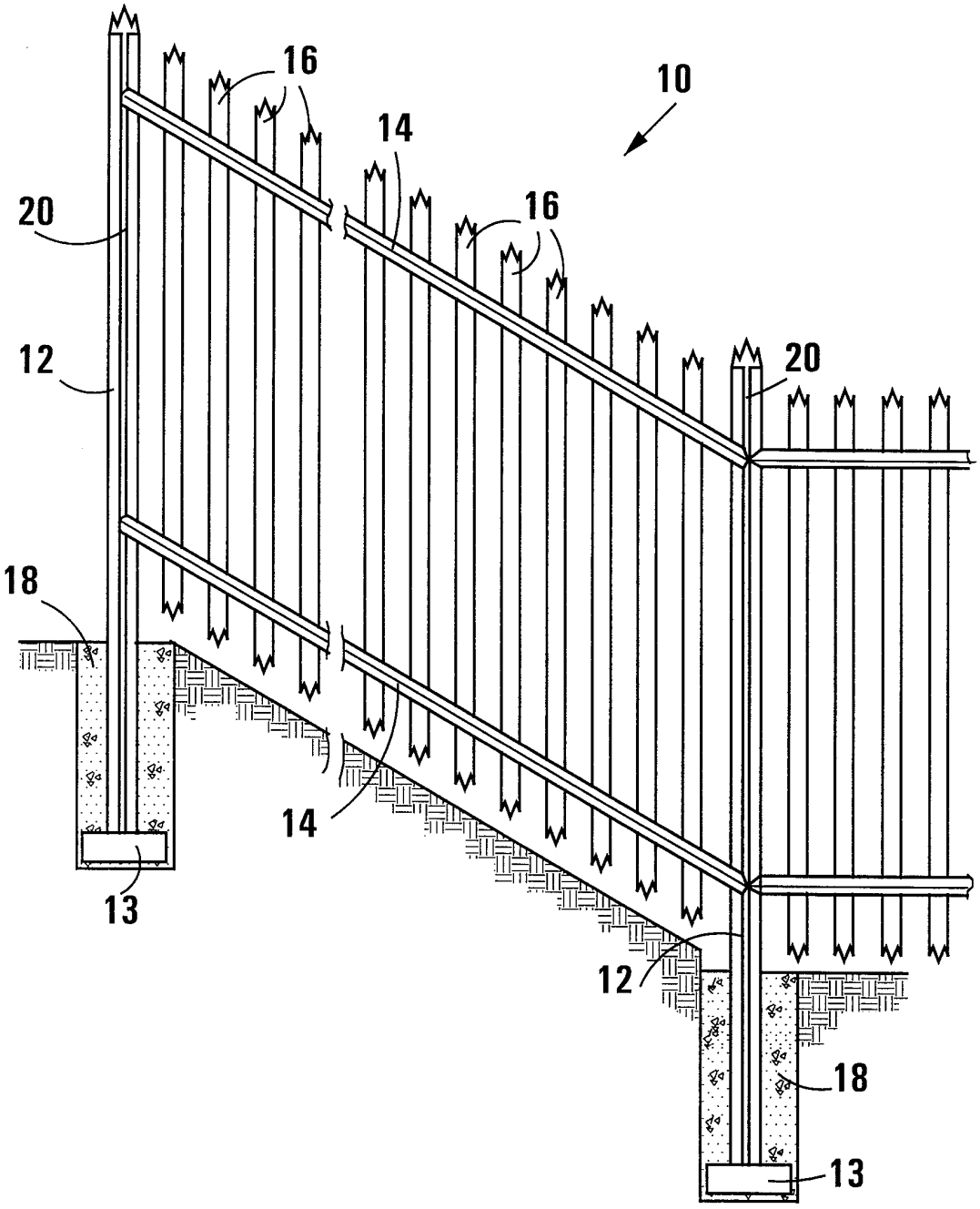

FIG 1

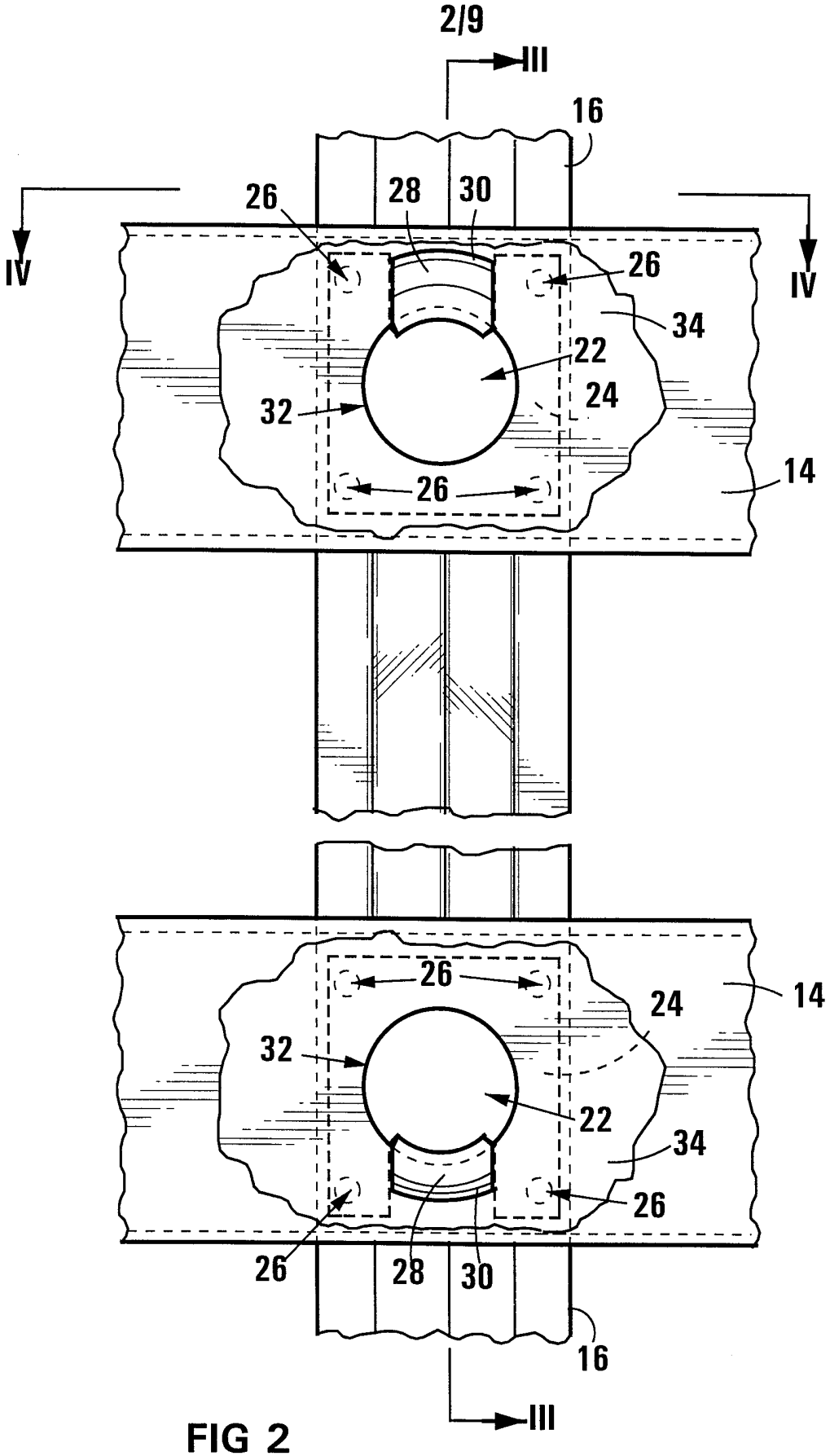
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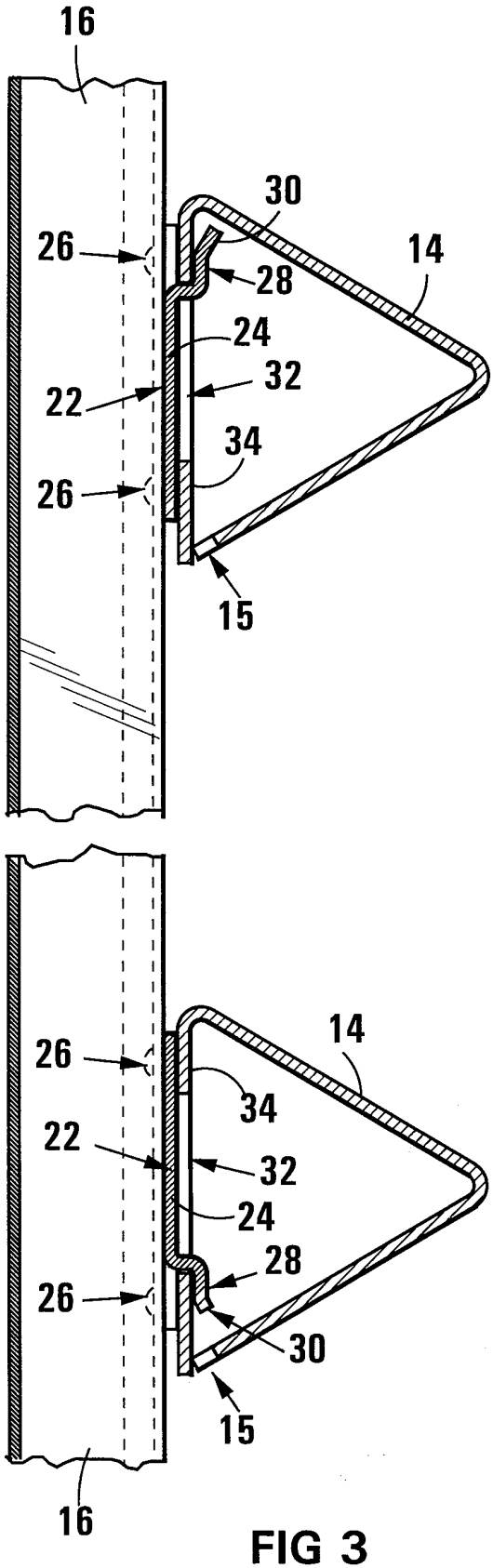
FIG 2



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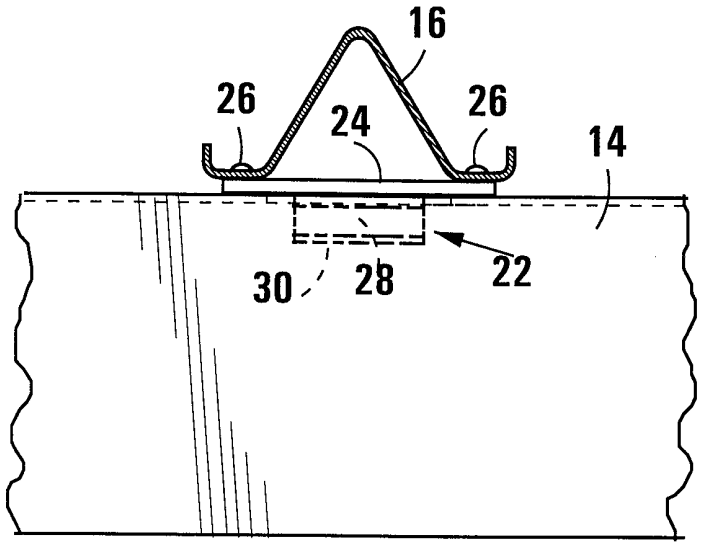

FIG 4

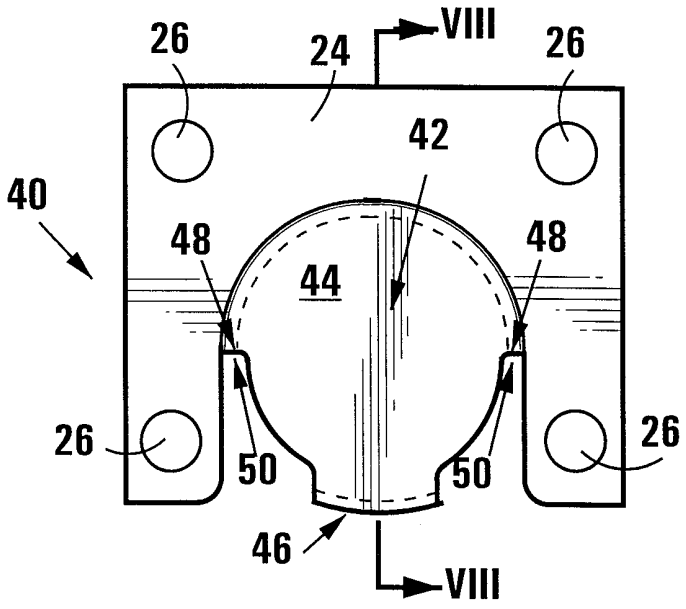

FIG 7

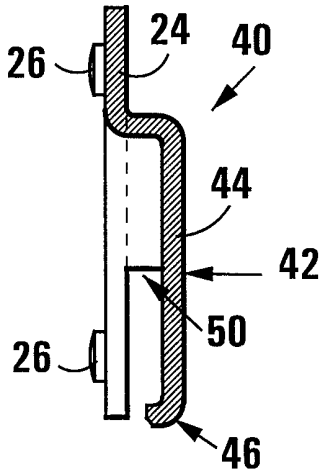

FIG 8

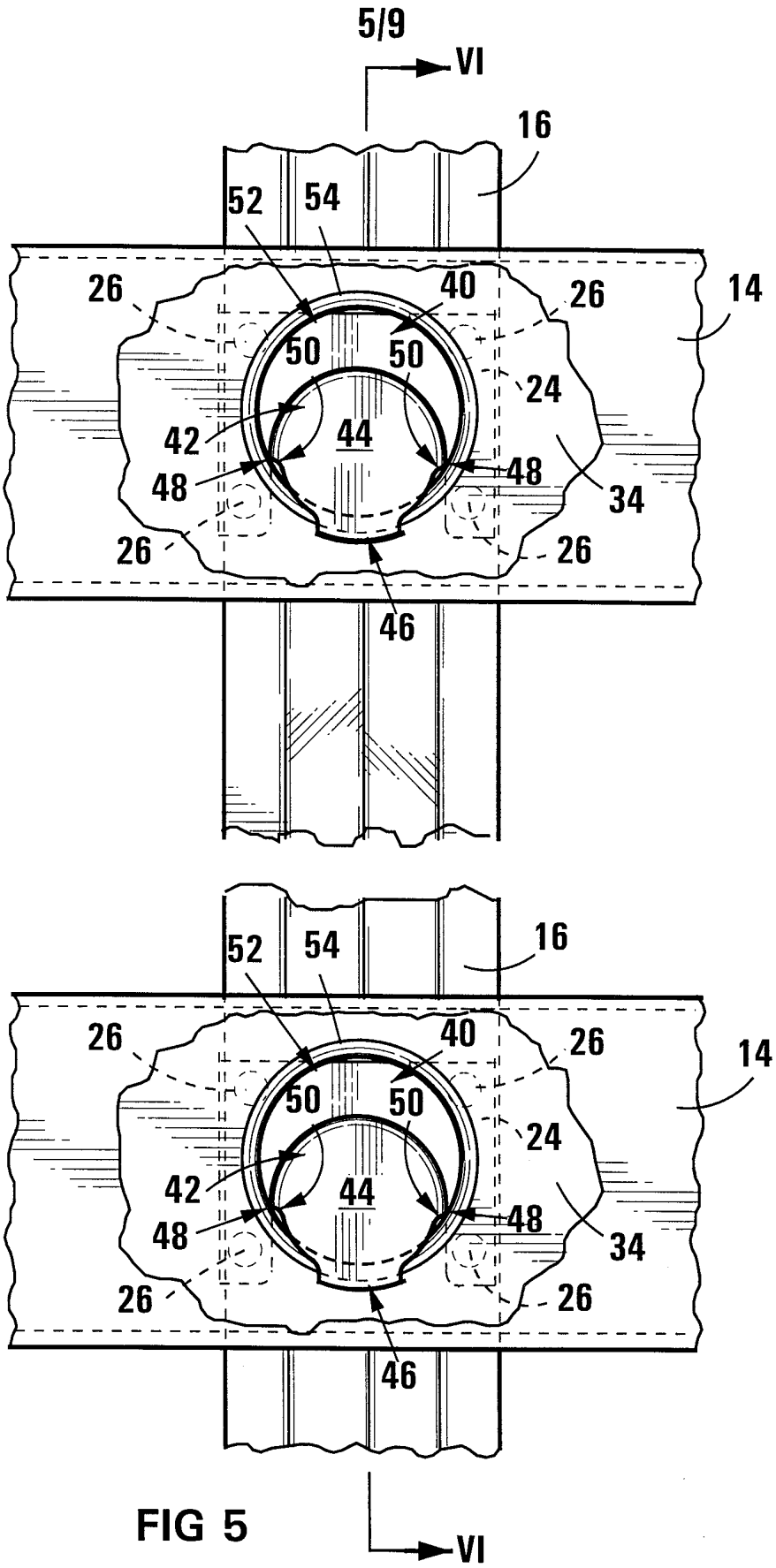
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FIG 5

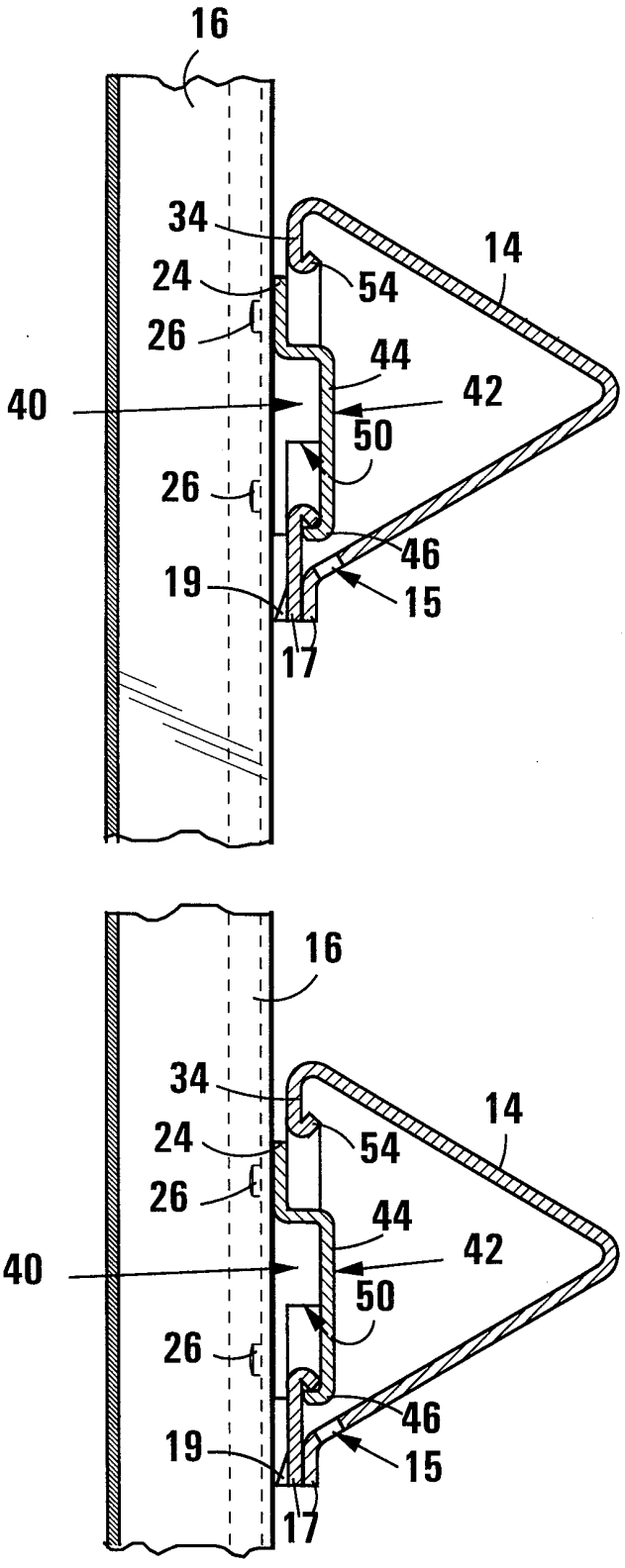
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FIG 6

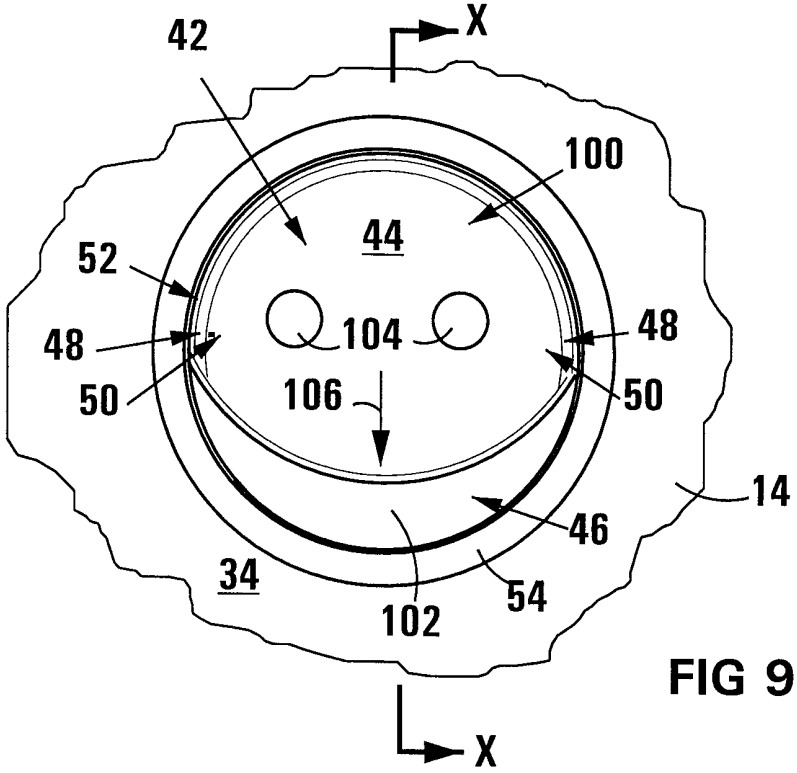
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FIG 9

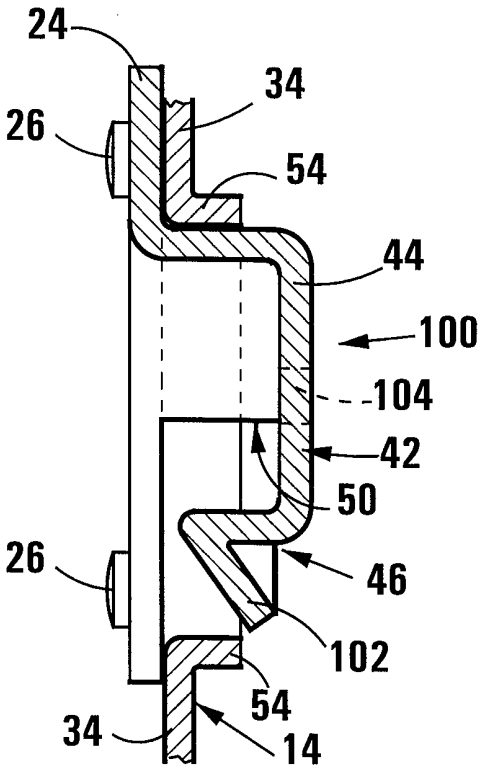
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FIG 10

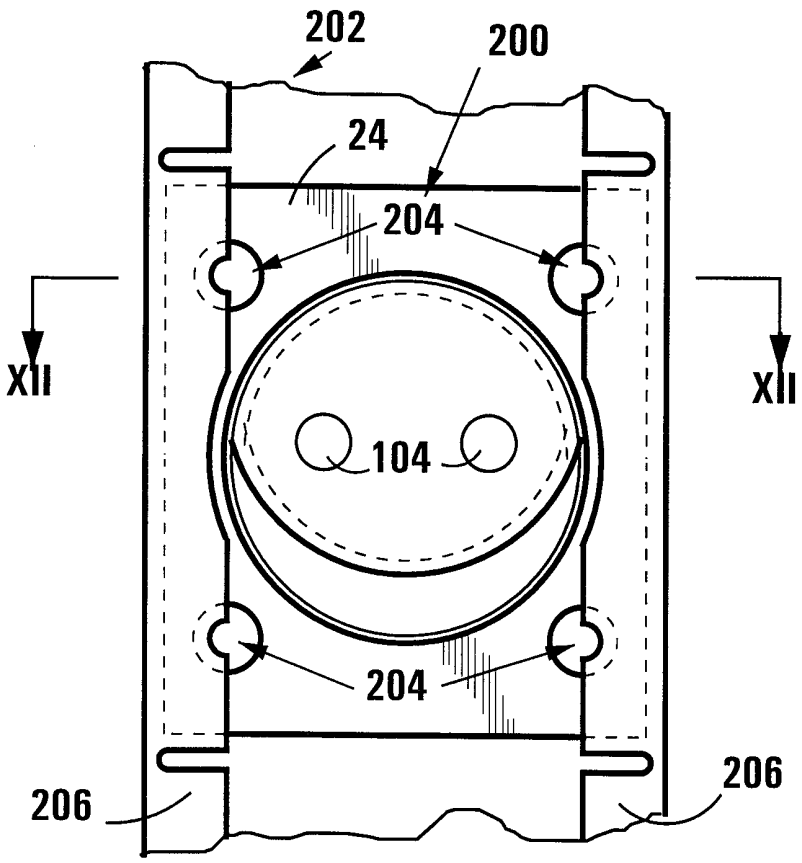
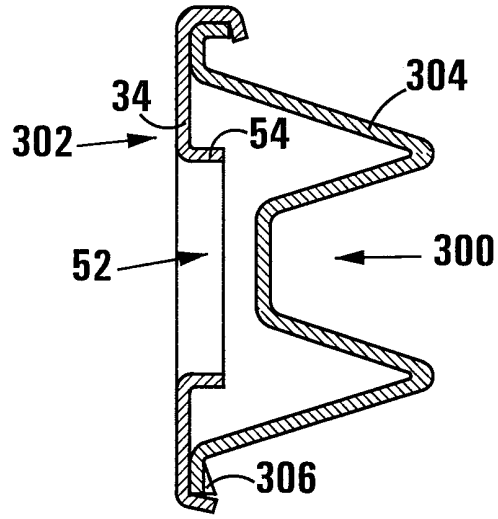


FIG 11



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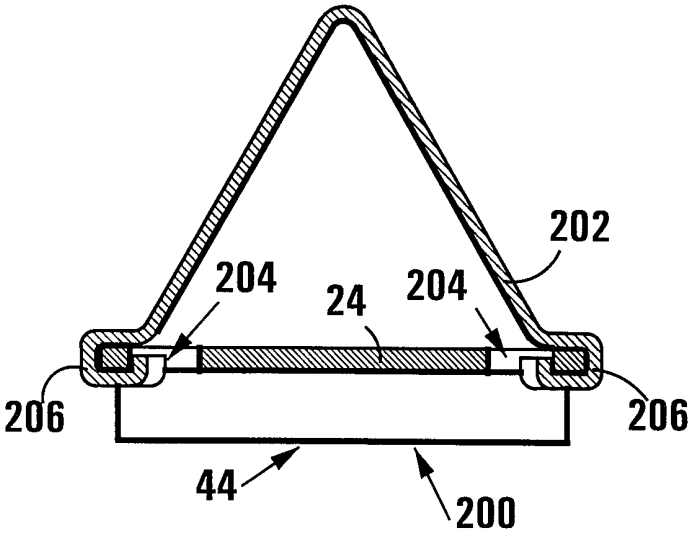

FIG 12

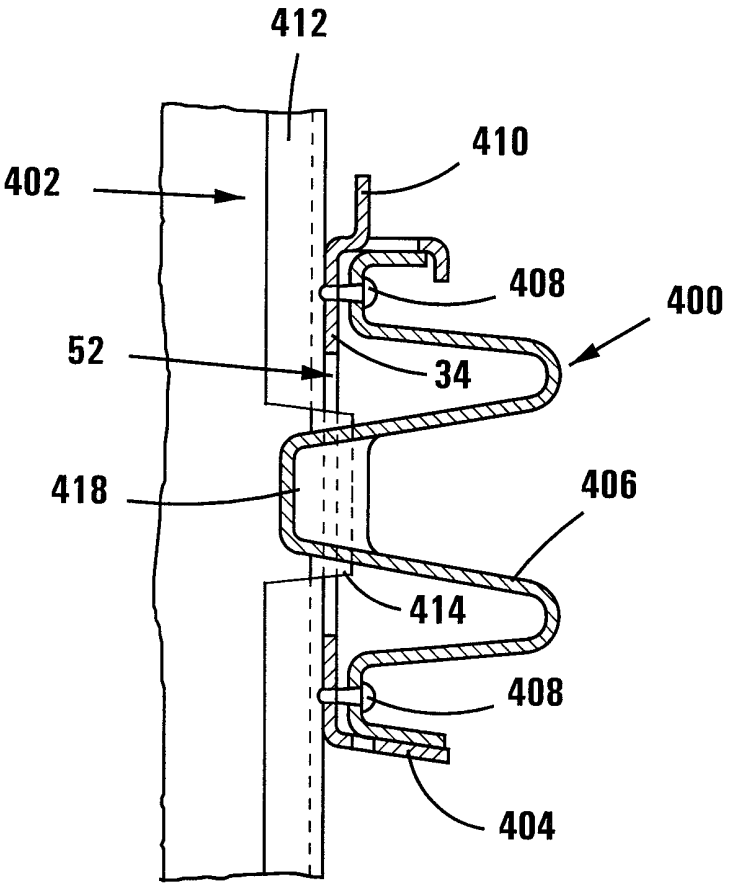
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FIG 14

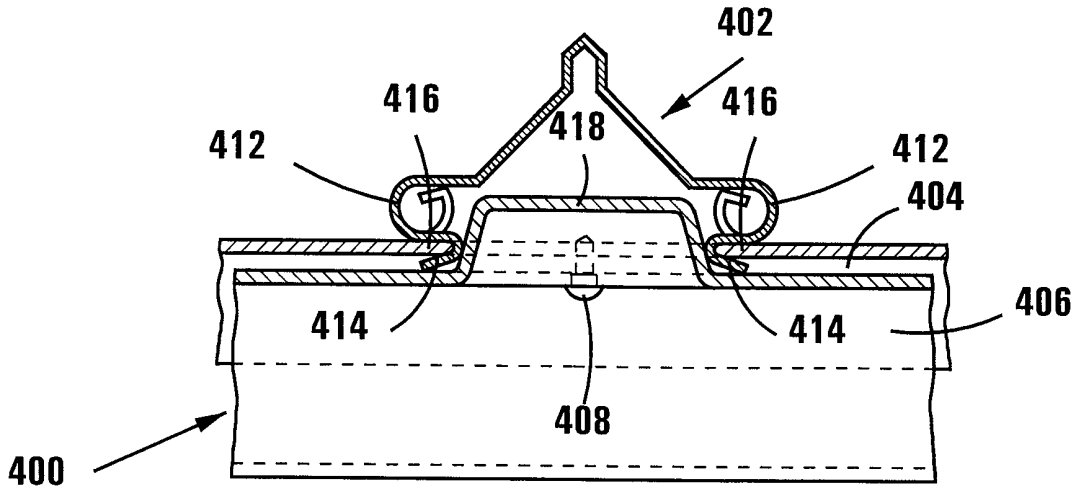
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FIG 15

INTERNATIONAL SEARCH REPORT

Intr ional Application No
PC /IB 99/01288

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 E04H17/14

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 E04H F16B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP 0 059 913 A (KWIKFORM LIMITED) 15 September 1982 (1982-09-15) abstract page 4, paragraph 2 - paragraph 5 page 5, paragraph 2 page 5, paragraph 5 page 7, paragraph 1 - paragraph 2 page 10, paragraph 2 claims 1-4,6 figures 1,2A,2B,4	1,2, 11-13, 21, 30-33, 38,47,50
A		3-5,7-9, 14,15, 22, 24-27, 34-36, 39-43

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[X] Further documents are listed in the continuation of box C.

[X] Patent family members are listed in annex.

° Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
14 September 1999	21/09/1999

Name and mailing address of the ISA	Authorized officer
European Patent Office, P.B. 5818 Patentlaan 2 NL – 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016	Schaeffler, C

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INTERNATIONAL SEARCH REPORT

Int' 'ional Application No
PC1/IB 99/01288

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication,where appropriate, of the relevant passages	Relevant to claim No.
X	WO 97 03266 A (BHP STEEL ET AL.) 30 January 1997 (1997-01-30) abstract page 3, paragraph 2 page 6, paragraph 3 - page 7, paragraph 1 claims 1-3,9 figure 3	1,2,47
A		3-5,7, 11-14, 21-27, 30-43, 48-50
X	US 4 625 948 A (LUSTVEE) 2 December 1986 (1986-12-02) abstract figures 1-5 column 2, line 13 - line 49 column 3, line 46 - line 61 column 5, line 1 - line 8 claims 1-3	1,2,47
A		3-7, 11-13, 21-27, 30-36, 38-43, 48-50
A	US 3 397 866 A (CORWIN G. HOCKETT) 20 August 1968 (1968-08-20) column 2, line 48 - line 63 column 4, line 55 - line 70 column 6, line 3 - line 45 claims 1-3 figures 1-4	1-5,7, 11,21, 30,46-50

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INTERNATIONAL SEARCH REPORT

nformation on patent family members

Int tional Application No
PC I/IB 99/01288

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		GB 2094368 A	15-09-1982
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