



The subject of the present invention is a method and a device for assembling the chords of the legs for supporting an off-shore drilling and production oil rig.

Oil platforms, and especially jack-up platforms
5 include legs which bear on the sea bed and a barge mounted so that it can be moved and adjusted in terms of height along the legs.

The whole of the platform is floated out to the drilling or production site and the legs are lowered
10 until they come into contact with the sea bed, then, bearing on the legs, the barge is winched up above sea level to an altitude which places it out of reach of the highest waves.

Each leg is made up of vertical chords, for
15 example numbering three, joined together by a lattice of metal girders.

Each chord is made up of sections butt-welded together and each formed, on the one hand, by a rectangular plate and, on the other hand, by stiffeners in the
20 form of half-shells each welded to one of the main faces of the said plate.

The rectangular plates include teeth on their lateral faces, which teeth, over some of the length of the chords, form diametrically opposed racks intended to
25 interact with output pinions of drive mechanisms mounted on the barge of the platform.

Each stiffener welded to one of the main faces of the rectangular plates has a length which is shorter than the length of a plate so as to leave a free space at each
30 end of the plate allowing the sections to be butt-welded together when the chord is being assembled.

In order to ensure continuity of the stiffeners, a joining piece in the form of a half-shell and the profile of which corresponds to the profile of the
35 stiffeners, is positioned in the region of each free space and in the extension of the said stiffeners, after the sections of the chord have been butt-welded together.

This arrangement makes it possible to butt together the sections of the chord, which sections have



been premanufactured beforehand in the workshop, and weld them directly on site.

These joining pieces are welded from the outside onto the main faces of the rectangular plates and onto the edges of the stiffeners in order to form continuous stiffeners on each side of said plates, thus allowing the chords to be made more rigid.

These chords, which support the barge of the platform, are heavily loaded in terms of fatigue and the weld beads especially where the joining pieces are welded onto the other elements of the chord are also heavily loaded.

Now, with the assembly and welding techniques used to date, the weld beads, which can only be produced from the outside, exhibit joining defects more particularly in the region of the root of these weld beads, that is to say inside the joining piece in the zones of connection with the rectangular plates and the stiffeners.

These defects are stress concentration zones which are incompatible with the heavy fatigue loadings to which the legs of the oil platforms are subjected.

The object of the invention is to overcome these drawbacks by proposing an assembly method and device making it possible to produce a progressive connection of the weld beads of the joining pieces to the other elements of the chord, inside the chord, in order to avoid the formation of stress concentration zones.

The subject of the invention is a method for assembling the chords of the legs for supporting an oil platform, in which:

- a stiffener in the form of a half-shell is welded, from the outside, onto each main face of a rectangular plate, the said rectangular plate including teeth forming a rack on each of its lateral faces,

- several rectangular plates equipped with the said stiffeners are butt-welded together in order to form a chord, each stiffener having a length which is shorter than the length of a plate in order to leave a free space



between two adjacent stiffeners at the region where the plates are welded together,

- a joining piece in the form of a half-shell is positioned in the region of each free space and in the extension of the stiffeners,

- and each joining piece is welded from the outside onto the main face of the plates and onto the flanges of the adjacent stiffeners in order to form continuous stiffeners on each side of the said plates, characterized in that, prior to positioning and welding each stiffener and each joining piece, there is placed on the internal edge of each zone at which the stiffener connects with the plates and the joining piece connects with the plates and the stiffeners, a ceramic strip matched to the profile of each zone of connection and intended to shape the root of the weld bead.

Another subject of the invention is a device for assembling the chords of the legs for supporting an oil platform, each chord comprising sections each formed by a rectangular plate intended to be butt-welded to the rectangular plate of the adjacent sections and including teeth forming a rack on each of its lateral faces, a stiffener in the form of a half-shell welded to each main face of the rectangular plate, each stiffener having a length which is shorter than the length of a plate in order to leave a free space at the region of the weld between two adjacent plates, and joining pieces in the form of half-shells welded to each main face of the plates and the flange of each adjacent stiffener in order to form continuous stiffeners on each side of the said plates, characterized in that it includes means for welding, on the one hand, the stiffeners onto the main faces of the plates and, on the other hand, the joining pieces onto the main faces of the plates and onto the flanges of each adjacent stiffener and means for shaping the root of the weld beads of the stiffeners and of the joining pieces, the means being located on the internal edge of each zone at which the said stiffeners connect with the rectangular plates and each zone at which the



said joining pieces connect with the rectangular plates and the stiffeners.

According to other features of the invention:

5 - the means for shaping the root of the weld beads are formed by ceramic strips located on a support joined to the chord by joining members,

10 - the ceramic strips intended to shape the roots of the weld beads where the stiffeners and joining pieces are welded to the rectangular plates have a cross-section in the form of a triangle with rounded vertices,

15 - the ceramic strips intended to shape the roots of the weld beads where the stiffeners and joining pieces are welded to the rectangular plates are formed by independent elements and joined together by a tensioner line passing through the said elements,

20 - the ceramic strips intended to shape the weld bead roots between the joining pieces and the stiffeners are formed by elements which are hinged together in order to match the radius of curvature of the said stiffeners,
 - each element has a rectangular cross-section and includes a groove on that of its faces located facing the weld bead.

25 The invention will be better understood with the aid of the description which will follow, given solely by way of example and made with reference to the appended drawings, in which:

 - Fig. 1 is a diagrammatic elevation of an oil platform, for example a jack-up platform,

30 - Fig. 2 is a diagrammatic perspective view of a portion of a chord of a leg for supporting the oil platform,

 - Fig. 3 is a diagrammatic exploded perspective view of the chord portion represented in Fig. 2,

35 - Fig. 4 is a section along the line 4-4 of Fig. 2,

 - Fig. 5 is a section along the line 5-5 of Fig. 2,

 - Fig. 6 is a diagrammatic perspective view of the means for shaping the weld bead where the stiffeners



and the joining pieces are welded onto the rectangular plates,

- Fig. 7 is a diagrammatic perspective view of the means for shaping the weld bead between the joining
5 pieces and the stiffeners.

Fig. 1 diagrammatically represents a jack-up oil platform comprising a barge 1 mounted so that it can move on vertical legs 2 which are intended to bear on the sea bed 3 when the platform is in the drilling or production
10 position.

Each of the vertical legs 2 in this case exhibits a triangular cross-section and is made up of three chords 10 joined together by a lattice of metal girders 4.

Each leg 2 ends at its lower part in a foot 5.
15 The platform is moreover equipped, in the region of each leg 2, with a mechanism 6 for driving and suspending the barge 1 with respect to the said legs 2.

The drive mechanisms 6 make it possible to lower the legs 2 until they come into contact with the sea bed, then, bearing on the legs, to winch the barge 1 up above
20 the sea to an altitude which places it out of reach of the highest waves.

As represented in Figs 2 and 3, each chord 10 of the legs 2 is composed of several sections 11 each formed
25 of a rectangular plate 12 and of two stiffeners 13 in the form of a half-shell.

The ends of the rectangular plates 12 are chamfered to allow the sections 11 to be butt-welded together when the chord 10 is assembled.

30 The lateral faces of the rectangular plates 12 include teeth 14 in order to form two diametrically opposed racks on the chord 10, these racks being intended to interact with output pinions, not represented, of the drive mechanisms 6.

35 Each stiffener 13 is welded from the outside onto one of the main faces of the corresponding rectangular plate 12 and is shorter than the plate 12 in order to leave a free space A in the region where two adjacent plates 12 are welded together (Fig. 3), which makes it



possible to butt-weld the sections 11 when the chord 10 is being assembled.

5 In order to allow the stiffeners 13 to be welded, the longitudinal flanges of these stiffeners 13 are chamfered.

Thus, the sections 11 making up the chord 10 may be prefabricated in the workshop, then butted together and welded together directly on site.

10 Each chord 10 also includes interposed joining pieces 15 in the form of half-shells and the profile of which corresponds to the profile of the stiffeners 13.

A joining piece 15 is positioned in the region of each free space A and in the extension of the stiffeners 13 after the sections 11 have been butt-welded together.

15 These joining pieces 15 are welded from the outside onto the main faces of the rectangular plates 12 and onto the flanges of the stiffeners 13 in order to form continuous stiffeners on each side of the said plates 12.

20 In order to allow the joining pieces 15 to be welded on, the flanges of these joining pieces 15, as well as the flange at each end of the stiffeners 13 are chamfered.

25 The device for assembling the joining pieces 15 includes means, not represented in the figures, for welding the stiffeners onto the main faces of the plates 12 and the joining pieces 15 onto the main faces of the plates 12 and onto the flanges of each adjacent stiffener 13 and means 20 (Fig. 3) for shaping the root of the weld
30 beads where the said stiffeners 13 are welded onto the main faces of the plates 12 and said joining pieces are welded onto the main faces of the plates 12 and onto the flanges of the adjacent stiffeners 13.

35 These shaping means 20 are located on the internal edge of each zone where the stiffeners 13 connect with the plates 12 and the joining pieces 15 connect with the plates 12 and the stiffeners 13 and are formed by ceramic strips 21a, 21b and 22a, 22b.

One strip 21a is located on the internal edge of



the zone of connection between one of the longitudinal flanges of each stiffener 13 and the main face of the corresponding plate 12 and one strip 21b is located on the internal edge of the zone of connection between the other longitudinal flange of each stiffener 13 and the main face of the corresponding plate 12.

On the other hand, a strip 21a is located on the internal edge of the zone of connection between the longitudinal flange 15a of the joining piece 15 at the main faces of the plates 12 and a strip 21b is located on the internal edge of the zone of connection between the longitudinal flange 15b of the joining piece 15 and the main faces of the said plates 12.

The strips 21a and 21b form a continuous line and have a cross-section in the form of a triangle with rounded vertices so as to match the shape of the connection between the stiffeners 13, the joining piece 15 and the plates 12, as represented in Figure 4.

These strips 21a and 21b are each mounted on a support 23, for example one made of steel (Fig. 4).

As represented in Fig. 6, the strips 21a and 21b are formed by independent elements 28 joined together by a tensioner line 29 passing through the said elements 28.

One strip 22a is located on the internal edge of the zone of connection between the lateral flange 15c of the joining piece 15 and the adjacent stiffener 13 and a strip 22c is located on the internal edge of the zone of connection between the lateral flange 15d of the joining piece 15 and the stiffener 13 adjacent to this lateral flange.

The strips 22a and 22b are mounted on a support 24, for example one made of steel (Fig. 5).

As represented in Fig. 7, the strips 22a and 22b are formed by elements 25 of rectangular cross-section hinged together in order to match the radius of curvature of the stiffeners 13 and of the joining pieces 15.

Each element 25 includes a groove 26 on that of its faces which is located facing the weld bead.

The supports 23 and 24 may be welded onto the



plates 12 and the stiffeners 13 or may be fixed onto the said plates and the said stiffeners by suitable fasteners.

5 The chords 10 are assembled in the following manner.

First of all, the ceramic strips 21a and 21b are placed on the internal edge of each zone of connection of the stiffeners 13 with the main faces of the corresponding rectangular plate 12 and a stiffener 13 is welded on
10 the outside onto each main face of a rectangular plate 12 in order to form sections 11, then the said sections 11 are butt-welded together directly on site in order to produce the chord 10.

Next, the ceramic strips 21a, 21b and 22a, 22b
15 are placed on the internal edge of each zone of connection of the joining piece 15 with the plates 12 and stiffeners 13 and each joining piece 15 is welded from the outside onto the main face of the plates 12 and onto the flanges of the adjacent stiffeners 13 in order to
20 form continuous stiffeners on each side of the said plates.

The ceramic strips 21a, 21b and 22a, 22b, while facilitating the task of the welders, support and shape the roots of the weld beads which makes it possible to
25 obtain progressive connection of the various components with less of a risk of defect and, thereby allows better fatigue strength.

What is more, the assembly tolerances for the components are wider, thus making it possible to reduce
30 the cost for preparing these components and to increase the speed of execution of the weld on the ceramic strips and requires a less highly qualified work force.



CLAIMS

1. Method for assembling the chords (10) of the legs (2) for supporting an oil platform, in which:

5 - a stiffener (13) in the form of a half-shell is welded, from the outside, onto each main face of a rectangular plate (12), the said rectangular plate (12) including teeth (14) forming a rack on each of its lateral faces,

10 - several rectangular plates (12) equipped with the said stiffeners (13) are butt-welded together in order to form a chord (10), each stiffener (13) having a length which is shorter than the length of a plate (12) in order to leave a free space between two adjacent stiffeners (13) at the region where the plates (12) are
15 welded together,

- a joining piece (15) in the form of a half-shell is positioned in the region of each free space and in the extension of the stiffeners (13),

20 - and each joining piece (15) is welded from the outside onto the main face of the plates (12) and onto the flanges of the adjacent stiffeners in order to form continuous stiffeners on each side of the said plates, characterized in that, prior to positioning and welding each stiffener (13) and each joining piece (15), there is
25 placed on the internal edge of each zone at which, on the one hand, the stiffener (13) connects with the plates (12) and, on the other hand, the joining piece (15) connects with the plates (12) and the stiffeners (13), a ceramic strip (21a, 21b; 22a, 22b) matched to the profile
30 of each zone of connection and intended to shape the root of the weld bead.

2. Device for assembling the chords (10) of the legs (2) for supporting an oil platform, each chord comprising sections (11) each formed by a rectangular plate (12) intended to be butt-welded to the rectangular plate (12)
35 of the adjacent sections (11) and including teeth (14) forming a rack on each of its lateral faces, a stiffener (13) in the form of a half-shell welded to each main face of the rectangular plate (12), each stiffener (13) having



a length which is shorter than the length of a plate (12) in order to leave a free space at the region of the weld between two adjacent plates (12), and joining pieces (15) in the form of half-shells welded to each main face of the plates (12) and the flange of each adjacent stiffener (13) in order to form continuous stiffeners on each side of the said plates (12), characterized in that it includes means for welding, on the one hand, the stiffeners (13) onto the main faces of the plates (12) and, on the other hand, the joining pieces (15) onto the main faces of the plates (12) and onto the flanges of each adjacent stiffener (13) and means (21a, 21b; 22a, 22b) for shaping the root of the weld beads of the stiffeners (13) and of the joining pieces (15), the means being located on the internal edge of each zone at which the said stiffeners (13) connect with the rectangular plates (12) and each zone at which the said joining pieces (15) connect with the rectangular plates (12) and the stiffeners (13).

3. Device according to Claim 2, characterized in that the means for shaping the root of the weld beads are formed by ceramic strips (21a, 21b; 22a, 22b) mounted on a support (23, 24) joined to the chord (10) by joining members.

4. Device according to Claim 3, characterized in that the ceramic strips (21a, 21b) intended to shape the roots of the weld beads where the stiffeners (13) and joining pieces (15) are welded to the rectangular plates (12) have a cross-section in the form of a triangle with rounded vertices.

5. Device according to Claim 4, characterized in that the strips (21a, 21b) are formed by independent elements (28) joined together by a tensioner line (29) passing through the said elements.

6. Device according to Claim 3, characterized in that the ceramic strips (22a, 22b) intended to shape the roots of the weld beads between the joining pieces (15) and the stiffeners (13) are formed by elements (25) which are hinged together in order to match the radius of curvature of the said stiffeners (13).





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7. Device according to Claim 6, characterized in that each element (25) has a rectangular cross-section and includes a groove (26) on that of its faces located facing the weld bead.

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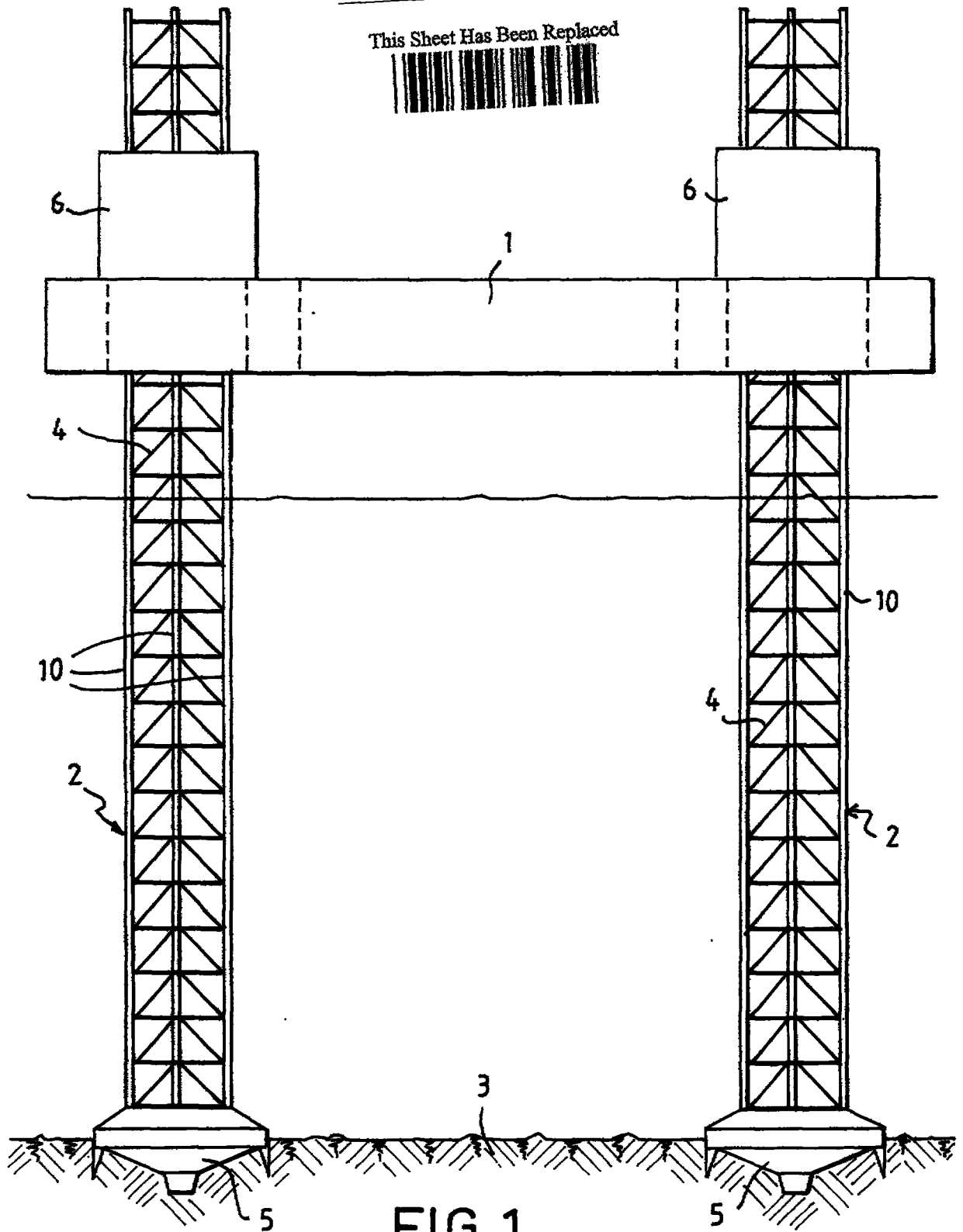


FIG. 1

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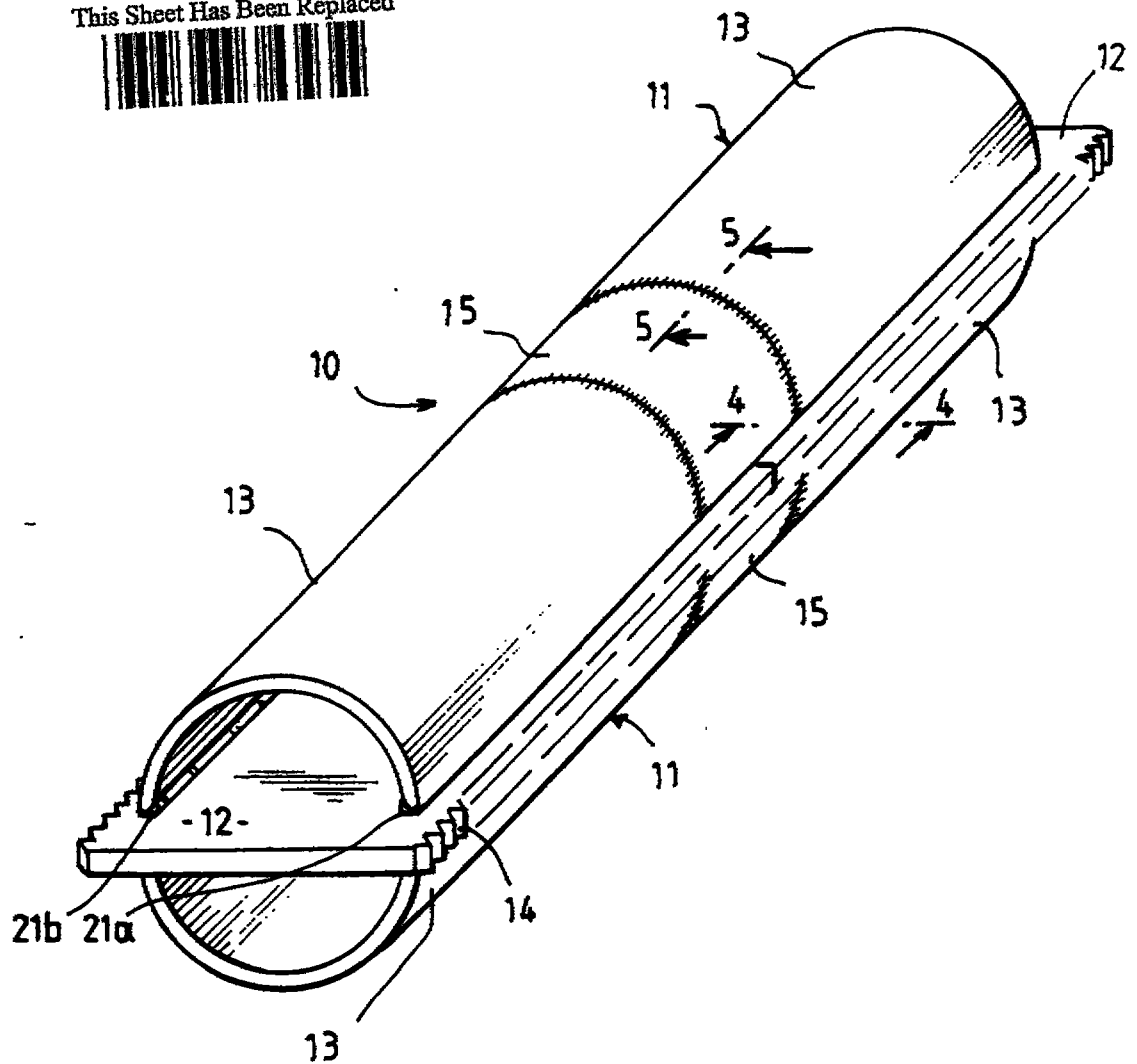
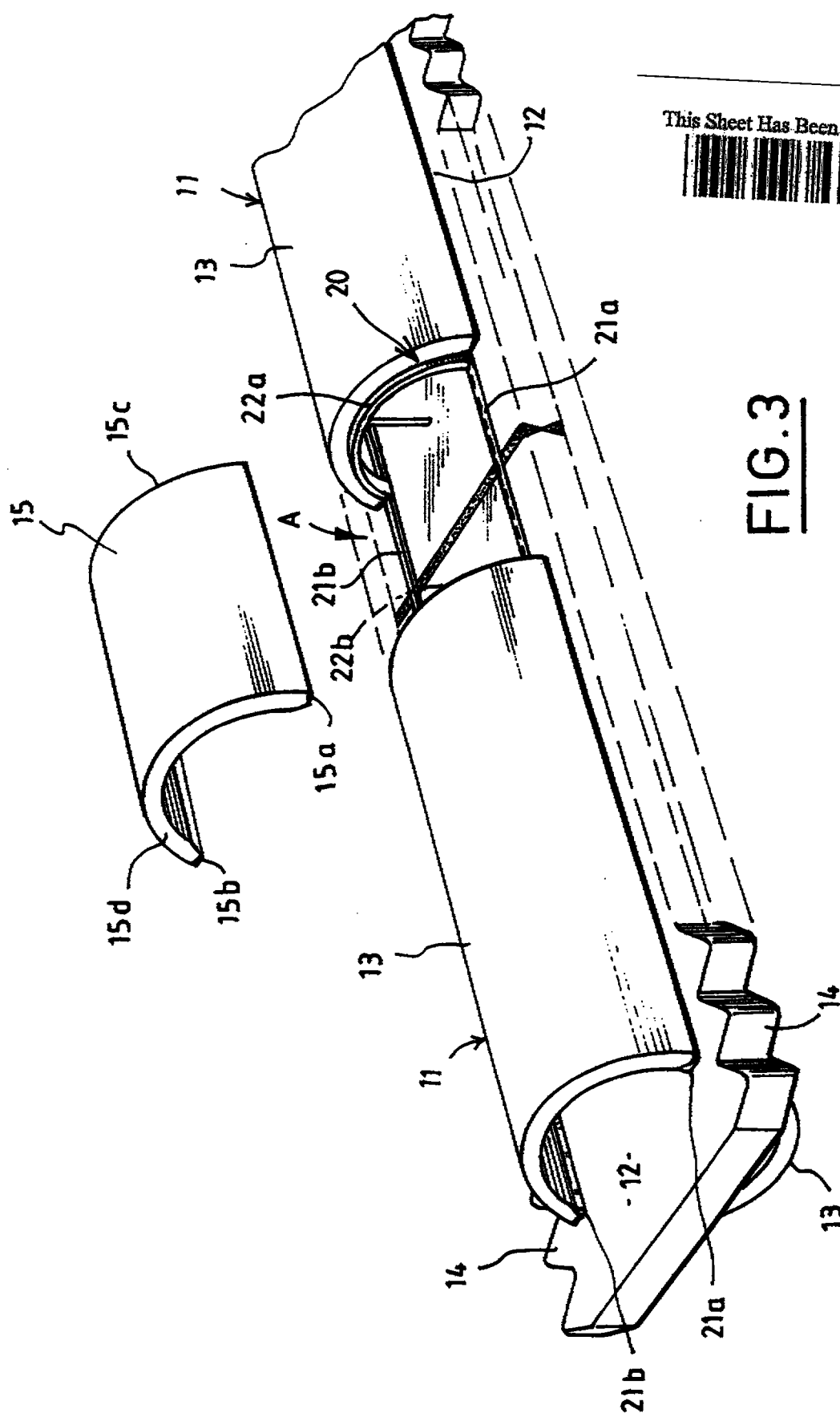


FIG. 2

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FIG. 3



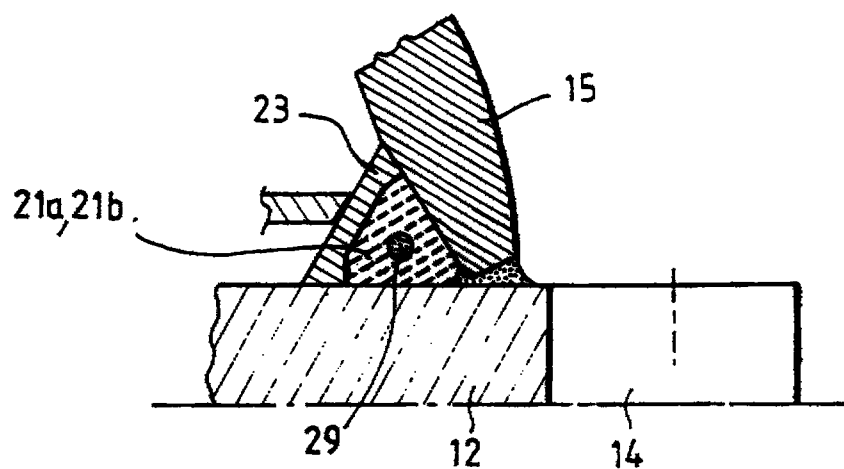


FIG. 4

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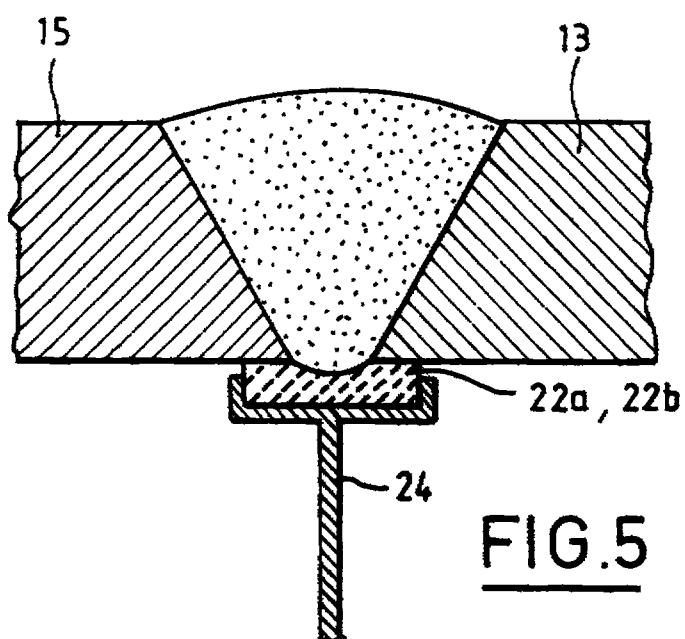


FIG. 5

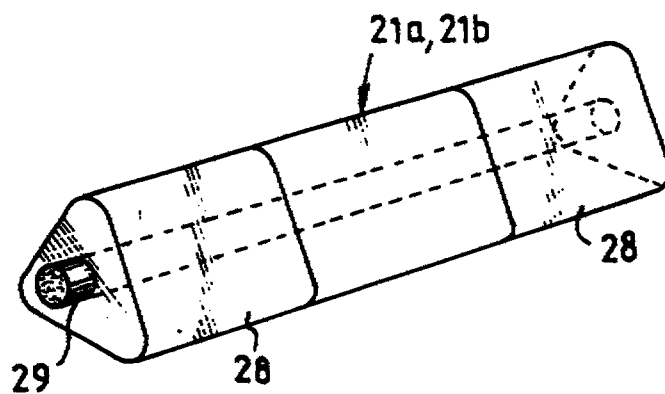


FIG. 6

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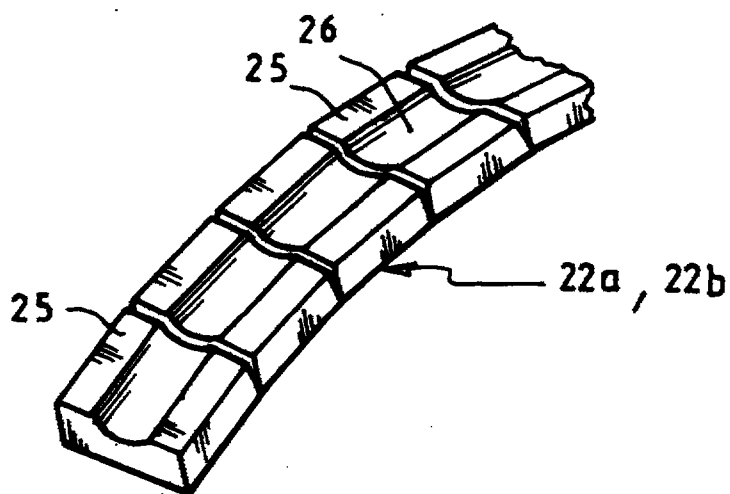
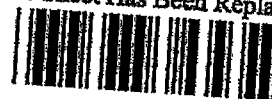


FIG. 7



METHOD AND DEVICE FOR ASSEMBLING THE CHORDS OF THE
LEGS FOR SUPPORTING AN OIL PLATFORM

The subject of the present invention is a method and a device for assembling the chords of the legs for supporting an off-shore drilling and production oil rig.

Oil platforms, and especially jack-up platforms include legs which bear on the sea bed and a barge mounted so that it can be moved and adjusted in terms of height along the legs.

The whole of the platform is floated out to the drilling or production site and the legs are lowered until they come into contact with the sea bed, then, bearing on the legs, the barge is winched up above sea level to an altitude which places it out of reach of the highest waves.

Each leg is made up of vertical chords, for example numbering three, joined together by a lattice of metal girders.

Each chord is made up of sections butt-welded together and each formed, on the one hand, by a rectangular plate and, on the other hand, by stiffeners in the form of half-shells each welded to one of the main faces of the said plate.

The rectangular plates include teeth on their lateral faces, which teeth, over some of the length of the chords, form diametrically opposed racks intended to interact with output pinions of drive mechanisms mounted on the barge of the platform.

Each stiffener welded to one of the main faces of the rectangular plates has a length which is shorter than the length of a plate so as to leave a free space at each end of the plate allowing the sections to be butt-welded together when the chord is being assembled.

In order to ensure continuity of the stiffeners, a joining piece in the form of a half-shell and the profile of which corresponds to the profile of the stiffeners, is positioned in the region of each free space and in the extension of the said stiffeners, after the sections of the chord have been butt-welded together.

This arrangement makes it possible to butt together the sections of the chord, which sections have

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been premanufactured beforehand in the workshop, and weld them directly on site.

These joining pieces are welded from the outside onto the main faces of the rectangular plates and onto the edges of the stiffeners in order to form continuous stiffeners on each side of said plates, thus allowing the chords to be made more rigid.

These chords, which support the barge of the platform, are heavily loaded in terms of fatigue and the weld beads especially where the joining pieces are welded onto the other elements of the chord are also heavily loaded.

Now, with the assembly and welding techniques used to date, the weld beads, which can only be produced from the outside, exhibit joining defects more particularly in the region of the root of these weld beads, that is to say inside the joining piece in the zones of connection with the rectangular plates and the stiffeners.

These defects are stress concentration zones which are incompatible with the heavy fatigue loadings to which the legs of the oil platforms are subjected.

The object of the invention is to overcome these drawbacks by proposing an assembly method and device making it possible to produce a progressive connection of the weld beads of the joining pieces to the other elements of the chord, inside the chord, in order to avoid the formation of stress concentration zones.

The subject of the invention is a method for assembling the chords of the legs for supporting an oil platform, in which:

- a stiffener in the form of a half-shell is welded, from the outside, onto each main face of a rectangular plate, the said rectangular plate including teeth forming a rack on each of its lateral faces,

- several rectangular plates equipped with the said stiffeners are butt-welded together in order to form a chord, each stiffener having a length which is shorter than the length of a plate in order to leave a free space



- between two adjacent stiffeners at the region where the plates are welded together,

- a joining piece in the form of a half-shell is positioned in the region of each free space and in the extension of the stiffeners,

- and each joining piece is welded from the outside onto the main face of the plates and onto the flanges of the adjacent stiffeners in order to form continuous stiffeners on each side of the said plates, characterized in that, prior to positioning and welding each stiffener and each joining piece, there is placed on the internal edge of each zone at which the stiffener connects with the plates and the joining piece connects with the plates and the stiffeners, a ceramic strip matched to the profile of each zone of connection and intended to shape the root of the weld bead.

Another subject of the invention is a device for assembling the chords of the legs for supporting an oil platform, each chord comprising sections each formed by a rectangular plate intended to be butt-welded to the rectangular plate of the adjacent sections and including teeth forming a rack on each of its lateral faces, a stiffener in the form of a half-shell welded to each main face of the rectangular plate, each stiffener having a length which is shorter than the length of a plate in order to leave a free space at the region of the weld between two adjacent plates, and joining pieces in the form of half-shells welded to each main face of the plates and the flange of each adjacent stiffener in order to form continuous stiffeners on each side of the said plates, characterized in that it includes means for welding, on the one hand, the stiffeners onto the main faces of the plates and, on the other hand, the joining pieces onto the main faces of the plates and onto the flanges of each adjacent stiffener and means for shaping the root of the weld beads of the stiffeners and of the joining pieces, the means being located on the internal edge of each zone at which the said stiffeners connect with the rectangular plates and each zone at which the



- said joining pieces connect with the rectangular plates and the stiffeners.

According to other features of the invention:

- the means for shaping the root of the weld beads are formed by ceramic strips located on a support joined to the chord by joining members,

- the ceramic strips intended to shape the roots of the weld beads where the stiffeners and joining pieces are welded to the rectangular plates have a cross-section in the form of a triangle with rounded vertices,

- the ceramic strips intended to shape the roots of the weld beads where the stiffeners and joining pieces are welded to the rectangular plates are formed by independent elements and joined together by a tensioner line passing through the said elements,

- the ceramic strips intended to shape the weld bead roots between the joining pieces and the stiffeners are formed by elements which are hinged together in order to match the radius of curvature of the said stiffeners,

- each element has a rectangular cross-section and includes a groove on that of its faces located facing the weld bead.

The invention will be better understood with the aid of the description which will follow, given solely by way of example and made with reference to the appended drawings, in which:

- Fig. 1 is a diagrammatic elevation of an oil platform, for example a jack-up platform,

- Fig. 2 is a diagrammatic perspective view of a portion of a chord of a leg for supporting the oil platform,

- Fig. 3 is a diagrammatic exploded perspective view of the chord portion represented in Fig. 2,

- Fig. 4 is a section along the line 4-4 of Fig. 2,

- Fig. 5 is a section along the line 5-5 of Fig. 2,

- Fig. 6 is a diagrammatic perspective view of the means for shaping the weld bead where the stiffeners



and the joining pieces are welded onto the rectangular plates,

- Fig. 7 is a diagrammatic perspective view of the means for shaping the weld bead between the joining pieces and the stiffeners.

Fig. 1 diagrammatically represents a jack-up oil platform comprising a barge 1 mounted so that it can move on vertical legs 2 which are intended to bear on the sea bed 3 when the platform is in the drilling or production position.

Each of the vertical legs 2 in this case exhibits a triangular cross-section and is made up of three chords 10 joined together by a lattice of metal girders 4.

Each leg 2 ends at its lower part in a foot 5.

The platform is moreover equipped, in the region of each leg 2, with a mechanism 6 for driving and suspending the barge 1 with respect to the said legs 2.

The drive mechanisms 6 make it possible to lower the legs 2 until they come into contact with the sea bed, then, bearing on the legs, to winch the barge 1 up above the sea to an altitude which places it out of reach of the highest waves.

As represented in Figs 2 and 3, each chord 10 of the legs 2 are [sic] composed of several sections 11 each formed of a rectangular plate 12 and of two stiffeners 13 in the form of a half-shell.

The ends of the rectangular plates 12 are chamfered to allow the sections 11 to be butt-welded together when the chord 10 is assembled.

The lateral faces of the rectangular plates 12 include teeth 14 in order to form two diametrically opposed racks on the chord 10, these racks being intended to interact with output pinions, not represented, of the drive mechanisms 6.

Each stiffener 13 is welded from the outside onto one of the main faces of the corresponding rectangular plate 12 and is shorter than the plate 12 in order to leave a free space A in the region where two adjacent plates 12 are welded together (Fig. 3), which makes it



possible to butt-weld the sections 11 when the chord 10 is being assembled.

In order to allow the stiffeners 13 to be welded, the longitudinal flanges of these stiffeners 13 are chamfered.

Thus, the sections 11 making up the chord 10 may be prefabricated in the workshop, then butted together and welded together directly on site.

Each chord 10 also includes interposed joining pieces 15 in the form of half-shells and the profile of which corresponds to the profile of the stiffeners 13.

A joining piece 15 is positioned in the region of each free space A and in the extension of the stiffeners 13 after the sections 11 have been butt-welded together.

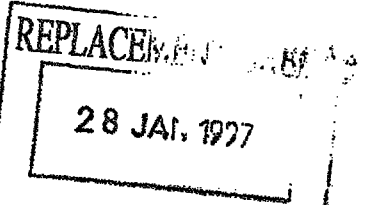
These joining pieces 15 are welded from the outside onto the main faces of the rectangular plates 12 and onto the flanges of the stiffeners 13 in order to form continuous stiffeners on each side of the said plates 12.

In order to allow the joining pieces 15 to be welded on, the flanges of these joining pieces 15, as well as the flange at each end of the stiffeners 13 are chamfered.

The device for assembling the joining pieces 15 includes means, not represented in the figures, for welding the stiffeners onto the main faces of the plates 12 and the joining pieces 15 onto the main faces of the plates 12 and onto the flanges of each adjacent stiffener 13 and means 20 (Fig. 3) for shaping the root of the weld beads where the said stiffeners 13 are welded onto the main faces of the plates 12 and said joining pieces are welded onto the main faces of the plates 12 and onto the flanges of the adjacent stiffeners 13.

These shaping means 20 are located on the internal edge of each zone where the stiffeners 13 connect with the plates 12 and the joining pieces 15 connect with the plates 12 and the stiffeners 13 and are formed by ceramic strips 21a, 21b and 22a, 22b.

One strip 21a is located on the internal edge of



the zone of connection between one of the longitudinal flanges of each stiffener 13 and the main face of the corresponding plate 12 and one strip 21b is located on the internal edge of the zone of connection between the other longitudinal flange of each stiffener 13 and the main face of the corresponding plate 12.

On the other hand, a strip 21a is located on the internal edge of the zone of connection between the longitudinal flange 15a of the joining piece 15 at the main faces of the plates 12 and a strip 21b is located on the internal edge of the zone of connection between the longitudinal flange 15b of the joining piece 15 and the main faces of the said plates 12.

The strips 21a and 21b form a continuous line and have a cross-section in the form of a triangle with rounded vertices so as to match the shape of the connection between the stiffeners 13, the joining piece 15 and the plates 12, as represented in Figure 4.

These strips 21a and 21b are each mounted on a support 23, for example one made of steel (Fig. 4).

As represented in Fig. 6, the strips 21a and 21b are formed by independent elements 28 joined together by a tensioner line 29 passing through the said elements 28.

One strip 22a is located on the internal edge of the zone of connection between the lateral flange 15c of the joining piece 15 and the adjacent stiffener 13 and a strip 22c is located on the internal edge of the zone of connection between the lateral flange 15d of the joining piece 15 and the stiffener 13 adjacent to this lateral flange.

The strips 22a and 22b are mounted on a support 24, for example one made of steel (Fig. 5).

As represented in Fig. 7, the strips 22a and 22b are formed by elements 25 of rectangular cross-section hinged together in order to match the radius of curvature of the stiffeners 13 and of the joining pieces 15.

Each element 25 includes a groove 26 on that of its faces which is located facing the weld bead.

The supports 23 and 24 may be welded onto the

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plates 12 and the stiffeners 13 or may be fixed onto the said plates and the said stiffeners by suitable fasteners.

The chords 10 are assembled in the following manner.

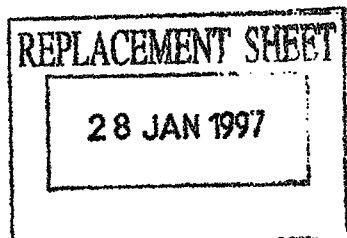
First of all, the ceramic strips 21a and 21b are placed on the internal edge of each zone of connection of the stiffeners 13 with the main faces of the corresponding rectangular plate 12 and a stiffener 13 is welded on the outside onto each main face of a rectangular plate 12 in order to form sections 11, then the said sections 11 are butt-welded together directly on site in order to produce the chord 10.

Next, the ceramic strips 21a, 21b and 22a, 22b are placed on the internal edge of each zone of connection of the joining piece 15 with the plates 12 and stiffeners 13 and each joining piece 15 is welded from the outside onto the main face of the plates 12 and onto the flanges of the adjacent stiffeners 13 in order to form continuous stiffeners on each side of the said plates.

The ceramic strips 21a, 21b and 22a, 22b, while facilitating the task of the welders, support and shape the roots of the weld beads which makes it possible to obtain progressive connection of the various components with less of a risk of defect and, thereby allows better fatigue strength.

What is more, the assembly tolerances for the components are wider, thus making it possible to reduce the cost for preparing these components and to increase the speed of execution of the weld on the ceramic strips and requires a less highly qualified work force.

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CLAIMS

1. Method for assembling the chords (10) of the legs (2) for supporting an oil platform, in which:

- a stiffener (13) in the form of a half-shell is welded, from the outside, onto each main face of a rectangular plate (12), the said rectangular plate (12) including teeth (14) forming a rack on each of its lateral faces,

- several rectangular plates (12) equipped with the said stiffeners (13) are butt-welded together in order to form a chord (10), each stiffener (13) having a length which is shorter than the length of a plate (12) in order to leave a free space between two adjacent stiffeners (13) at the region where the plates (12) are welded together,

- a joining piece (15) in the form of a half-shell is positioned in the region of each free space and in the extension of the stiffeners (13),

- and each joining piece (15) is welded from the outside onto the main face of the plates (12) and onto the flanges of the adjacent stiffeners in order to form continuous stiffeners on each side of the said plates, characterized in that, prior to positioning and welding each stiffener (13) and each joining piece (15), there is placed on the internal edge of each zone at which, on the one hand, the stiffener (13) connects with the plates (12) and, on the other hand, the joining piece (15) connects with the plates (12) and the stiffeners (13), a ceramic strip (21a, 21b; 22a, 22b) matched to the profile of each zone of connection and intended to shape the root of the weld bead.

2. Device for assembling the chords (10) of the legs (2) for supporting an oil platform, each chord comprising sections (11) each formed by a rectangular plate (12) intended to be butt-welded to the rectangular plate (12) of the adjacent sections (11) and including teeth (14) forming a rack on each of its lateral faces, a stiffener (13) in the form of a half-shell welded to each main face of the rectangular plate (12), each stiffener (13) having



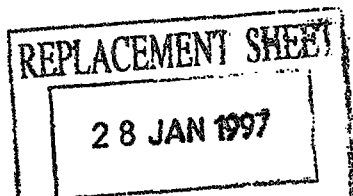
a length which is shorter than the length of a plate (12) in order to leave a free space at the region of the weld between two adjacent plates (12), and joining pieces (15) in the form of half-shells welded to each main face of the plates (12) and the flange of each adjacent stiffener (13) in order to form continuous stiffeners on each side of the said plates (12), characterized in that it includes means for welding, on the one hand, the stiffeners (13) onto the main faces of the plates (12) and, on the other hand, the joining pieces (15) onto the main faces of the plates (12) and onto the flanges of each adjacent stiffener (13) and means (21a, 21b; 22a, 22b) for shaping the root of the weld beads of the stiffeners (13) and of the joining pieces (15), the means being located on the internal edge of each zone at which the said stiffeners (13) connect with the rectangular plates (12) and each zone at which the said joining pieces (15) connect with the rectangular plates (12) and the stiffeners (13).

3. Device according to Claim 2, characterized in that the means for shaping the root of the weld beads are formed by ceramic strips (21a, 21b; 22a, 22b) mounted on a support (23, 24) joined to the chord (10) by joining members.

4. Device according to Claim 3, characterized in that the ceramic strips (21a, 21b) intended to shape the roots of the weld beads where the stiffeners (13) and joining pieces (15) are welded to the rectangular plates (12) have a cross-section in the form of a triangle with rounded vertices.

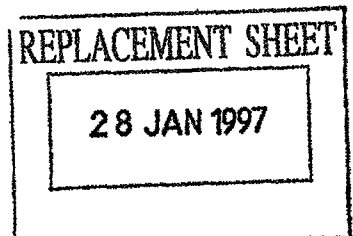
5. Device according to Claim 4, characterized in that the strips (21a, 21b) are formed by independent elements (28) joined together by a tensioner line (29) passing through the said elements.

6. Device according to Claim 3, characterized in that the ceramic strips (22a, 22b) intended to shape the roots of the weld beads between the joining pieces (15) and the stiffeners (13) are formed by elements (25) which are hinged together in order to match the radius of curvature of the said stiffeners (13).



7. Device according to Claim 6, characterized in that each element (25) has a rectangular cross-section and includes a groove (26) on that of its faces located facing the weld bead.

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Method and device for assembling the chords of the legs
for supporting an oil platform

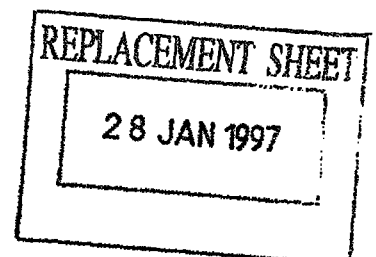
ABSTRACT

The subject of the invention is a method for assembling the chords (10) of the legs for supporting an oil platform, in which a stiffener (13) is welded onto each main face of a rectangular plate (12), several rectangular plates (12) equipped with the said stiffeners (13) are butt-welded together in order to form a chord (10), the said stiffeners leaving a free space between them, a joining piece (15) is positioned in the region of each free space and in extension of the stiffeners (13), and each joining piece (15) is welded from the outside. Prior to positioning and welding each stiffener (13) and each joining piece (15), there is placed on the internal edge of each zone at which the stiffener connects with the plates (12) and the joining piece (15) connects with the plates (12) and the stiffeners (13), a ceramic strip (21a, 21b; 22a, 22b) matched to the profile of each zone of connection and intended to shape the root of the weld bead.

Another subject of the invention is a device for implementing this method.

Fig. 3

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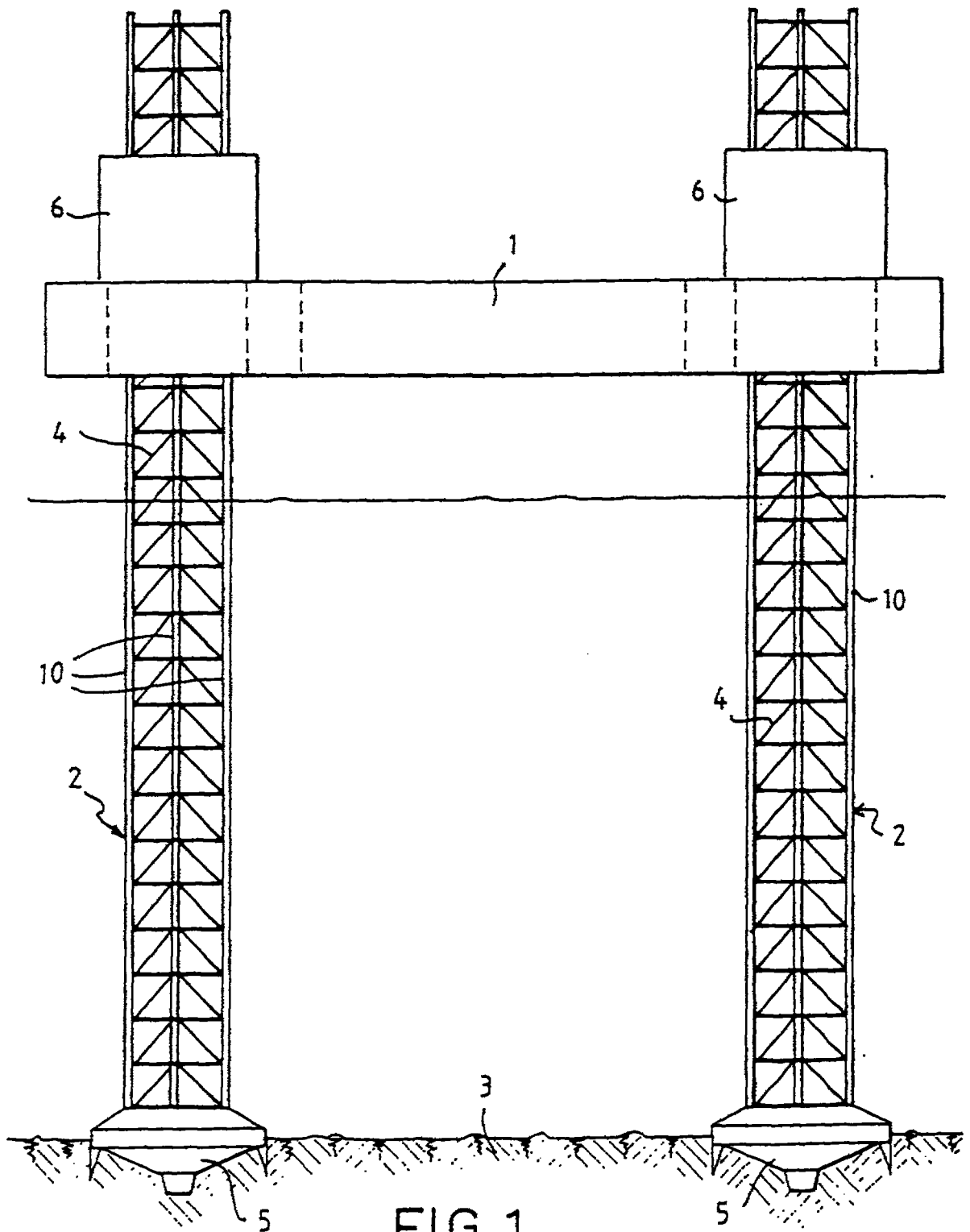


FIG. 1

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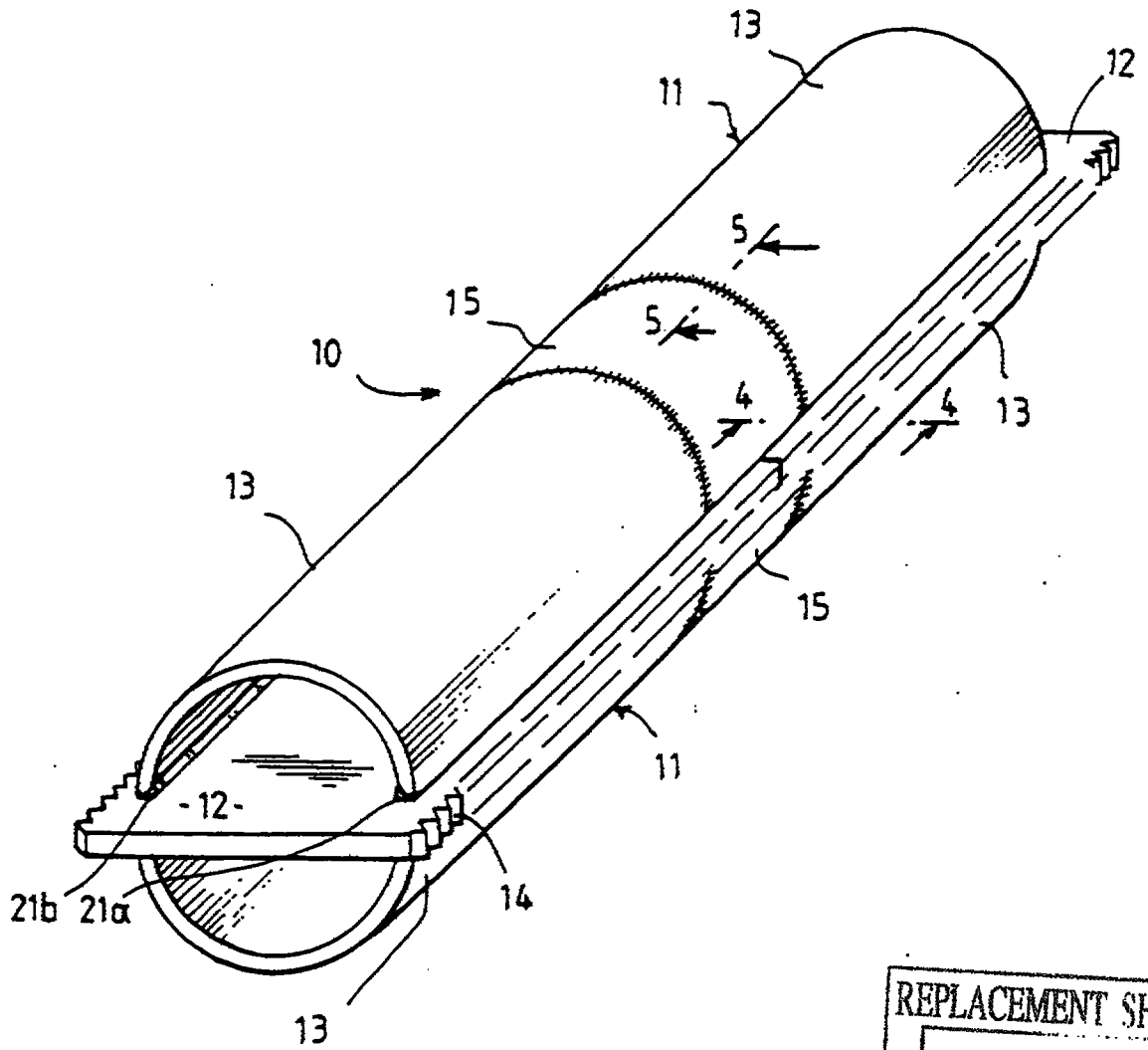
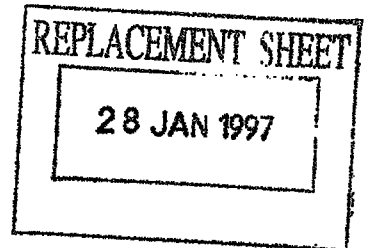


FIG. 2



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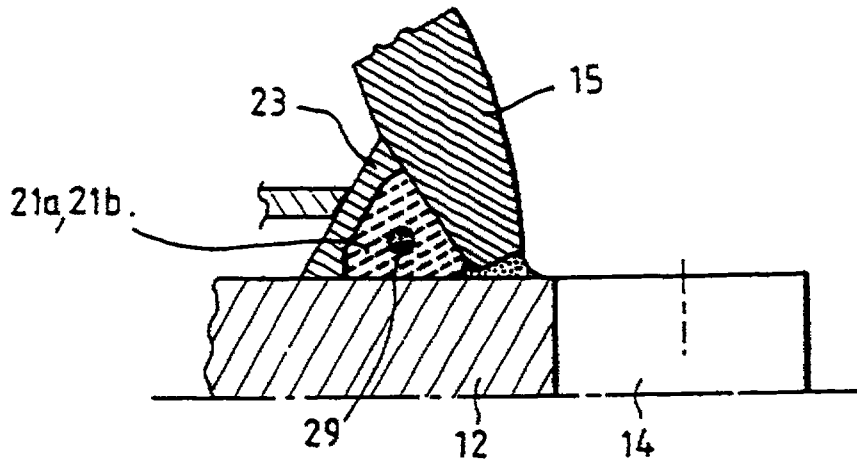


FIG. 4

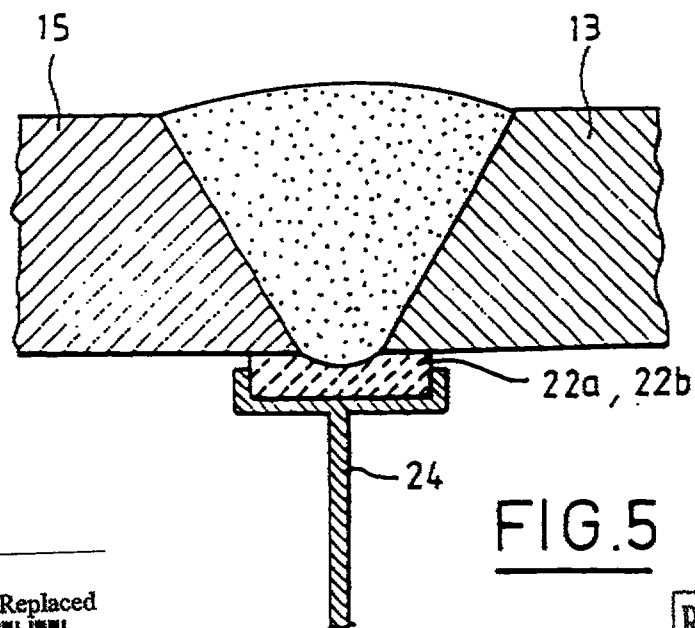


FIG. 5

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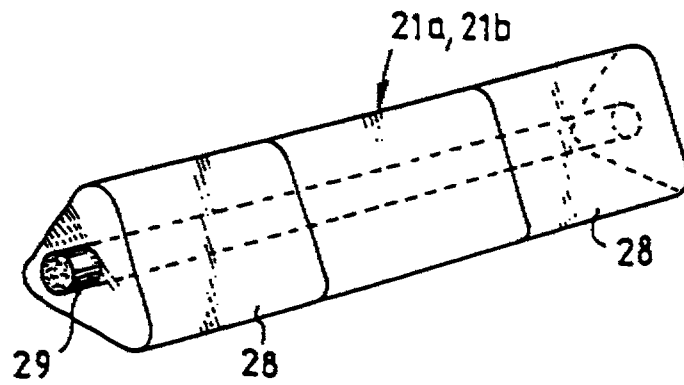


FIG. 6

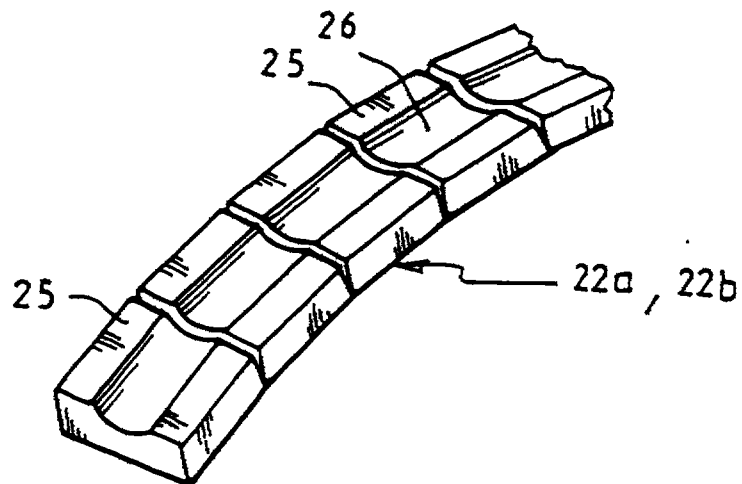
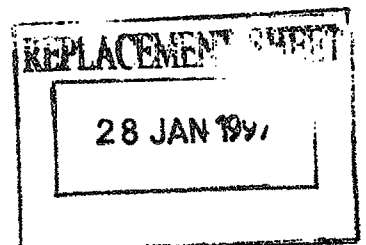


FIG. 7

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PROCESS AND DEVICE FOR ASSEMBLING THE FLANGES OF THE SUPPORTING LEGS 217198
OF AN OIL PLATFORM

The present invention relates to a process and an apparatus comprising girders of the support legs of an oil-drilling and marine exploitation platform (see for example JP-A-58-30887) .

Oil-drilling platforms and particularly self-raising platforms comprise legs which rest on the sea bed and a shell which is mounted so as to be movable and vertically adjustable along the legs.

The platform as a whole is floated to the drilling or exploitation site and the legs are lowered until they make contact with the sea bed, then by bearing on the legs, the shell is hoisted above the level of the sea, up to an altitude which brings it out of range of the highest waves.

Each leg consists of vertical girders, e.g. three, interconnected by a grid of metal struts.

Each girder consists of sections welded end to end and each formed, on the one hand, by a rectangular plate and, on the other hand, by reinforcers in the form of half-shells each welded to one of the main surfaces of said plate.

The rectangular plates comprise, on their side surfaces, teeth which form, along part of the length of the girders, diametrically opposed racks intended to cooperate with output pinions of drive mechanisms mounted on the shell of the platform.

Each reinforcer welded to one of the main surfaces of the rectangular plates has a length which is less than the length of a plate, so as to define a free space, at each end of the plate, to enable the sections to be welded end to end when the girder is assembled.

In order to ensure the continuity of the reinforcers, a connecting member in the form of a half-shell and with a profile corresponding to that of the reinforcers is positioned level with each free space and on an extension of said reinforcers, after the end to

end welding of the sections of the girder.

This arrangement makes it possible to position the sections of the girder, which have previously been prefabricated in a workshop, end to end and weld them together directly on site.

These connecting members are welded from outside on the main surfaces of the rectangular plates and on the edges of the reinforcers in order to form, on each side of said plates, continuous reinforcers which thus lock the girders into a rigid position.

These girders, which support the shell of the platform, are subject to powerful fatigue stress and the weld seams, particularly on the parts connected to the other elements of the girder, are subject to equally strong stresses.

In fact, with the assembly and welding techniques used hitherto, the weld seams, which can only be produced from outside, have defects in their attachment, particularly at the root of these weld seams, i.e. inside the connecting part in the zones of attachment to the rectangular plates and the reinforcers.

These defects are zones of stress concentration which are incompatible with the powerful fatigue stresses to which the legs of oil-drilling platforms are subjected.

The aim of the invention is to overcome these drawbacks by proposing a process and an assembly apparatus which make it possible to achieve, inside the girder, progressive attachment of the weld seams on the connecting parts to the other elements of the girder in order to avoid the formation of stress concentration zones.

The invention relates to a process for assembling the girders of the support legs of an oil-drilling platform, wherein:

a reinforcer in the form of a half-shell is welded from the outside onto each main surface of a rectangular plate, said rectangular plate comprising on each of its

side faces teeth forming a rack,

a plurality of rectangular plates fitted with said reinforcers are welded end to end to form a girder, each reinforcer being shorter in length than a plate so as to define, at the location of the weld between the plates, a free space between two adjacent reinforcers,

a connecting member in the form of a half-shell is positioned level with each free space and on an extension of the reinforcers,

and each connecting member is welded from the outside on to the main surface of the plates and on to the edges of the adjacent reinforcers to form continuous reinforcers on each side of said plates, characterised in that, prior to the positioning and welding of each reinforcer and each connecting member, a ceramic panel adapted to the profile of each connecting zone and intended to mould the root of the weld seam is placed on the inner edge of each connecting zone between, on the one hand, the reinforcer and the plates and, on the other hand, the connecting member and the plates and reinforcers.

The invention also relates to an apparatus comprising girders assembled by the assembly process according to claim 1, the girders forming the support legs of an oil-drilling platform, each girder comprising sections each of which is formed by a rectangular plate intended to be butt-welded to the rectangular plate of the adjacent sections and comprising, on each of its side faces, teeth forming a rack, a reinforcer in the form of a half-shell welded to each main surface of the rectangular plate, each reinforcer being shorter in length than a plate so as to define a free space at the location of the weld between two adjacent plates, and connecting members in the form of half-shells welded to each main surface of the plates and the edge of each adjacent reinforcer in order to form continuous reinforcers on each side of said plates, characterised in that it comprises means for welding, on the one hand,

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the reinforcers to the main surfaces of the plates and, on the other hand, the connecting members to the main surfaces of the plates and to the edges of each adjacent reinforcer and means for moulding the root of the weld seams of the reinforcers and the connecting members, located on the inner edge of each connecting zone of said reinforcers with the rectangular plates and said connecting members with the rectangular plates and the reinforcers.

According to further features of the invention:

the means for moulding the root of the weld seams consist of ceramic panels mounted on a support connected to the girder by connecting means,

the ceramic panels adapted to mould the roots of the weld seams of the reinforcers and the connecting members with the rectangular plates have a section in the shape of a triangle with rounded apexes,

the ceramic panels intended to mould the roots of the weld seams between the reinforcers and the connecting members with the rectangular plates are formed by independent elements connected to one another by a tensioning cable passing through said elements,

the ceramic panels intended to mould the roots of the weld seam between the connecting members and the reinforcers are formed by elements articulated on one another so as to adapt to the radius of curvature of said reinforcers,

each element is rectangular in section and comprises a groove on its surface facing the weld seam.

The invention will be more fully understood from the following description which is given solely by way of example and referring to the accompanying drawings, wherein:

Fig. 1 is a diagrammatic elevational view of an oil-drilling platform, e.g. a self-raising platform,

Fig. 2 is a diagrammatic perspective view of part of a girder of a support leg of the oil-drilling platform,

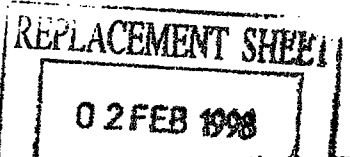


Fig. 3 is an exploded diagrammatic perspective view of the portion of the girder shown in Fig. 2,

Fig. 4 is a section on the line 4-4 in Fig. 2,

Fig. 5 is a section on the line 5-5 in Fig. 2,

Fig. 6 is a diagrammatic perspective view of the means for moulding the weld seam of the reinforcers and the connecting members on the rectangular plates,

Fig. 7 is a diagrammatic perspective view of the means for moulding the weld seam between the connecting members and the reinforcers.

Fig. 1 diagrammatically shows a self-raising oil-drilling platform comprising a shell 1 which is movably mounted on vertical legs 2 adapted to rest on the sea bed 3, when the platform is in the drilling or exploitation position.

Each of the vertical legs 2 is triangular in section, in this instance, and consists of three girders 10 connected to one another by a grid of metal struts 4.

Each leg 2 terminates, at its lower end, in a foot 5.

The platform is also equipped, level with each leg 2, with a driving and suspension mechanism 6 for the shell 1 relative to said legs 2.

The drive means 6 enable the legs 2 to be lowered until they make contact with the sea bed, then, by bearing on these legs, enable the shell 1 to be hoisted above the sea up to an altitude which brings it out of range of the highest waves.

As shown in Figs. 2 and 3, each girder 10 of the legs 2 is made up of a plurality of sections 11 each formed by a rectangular plate 12 and two reinforcers 13 in the form of half-shells.

The ends of the rectangular plates 12 are chamfered to allow the sections 11 to be welded end to end when the girder 10 is assembled.

The side surfaces of the rectangular plates 12 comprise teeth 14 for forming two diametrically opposed racks on the girder 12, which are adapted to cooperate

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with the output pinions (not shown) of the drive means 6.

Each reinforcer 13 is welded from the outside onto one of the main surfaces of the corresponding rectangular plate 12 and is of a length which is less than that of the plate 12 so as to define a free space A level with the weld between two adjacent plates 12 (Fig. 3), enabling the sections 11 to be welded end to end when the girder 10 is assembled.

In order to allow the reinforcers 13 to be welded, the longitudinal edges of these reinforcers 13 are chamfered.

Thus, the sections 11 which make up the girder 10 can be prefabricated in the workshop, then positioned end to end and welded together directly on site.

Each girder 10 also comprises intercalated connecting members 15 in the form of half-shells with a profile corresponding to that of the reinforcers 13.

A connecting member 15 is positioned level with each free space A and on an extension of the reinforcers 13 after the end to end welding of the sections 11.

These connecting members 15 are welded from outside to the main surfaces of the rectangular plates 12 and to the edges of the reinforcers 13 in order to form continuous reinforcers on each side of said plates 12.

In order to enable the connecting members 15 to be welded, the edges of these connecting members 15 and the edges of each end of the reinforcers 13 are chamfered.

The apparatus for assembling the connecting members 15 comprises welding means, not shown in the drawings, for welding the reinforcers to the main surfaces of the plates 12 and for welding the connecting members 15 to the main surfaces of the plates 12 and to the edges of each adjacent reinforcer 13 and means 20 for moulding (Fig. 3) the root of the weld seams of said reinforcers 13 to the main surfaces of the plates 12 and said connecting members to the main surfaces of the plates 12 and to the edges of the adjacent reinforcers 13.

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These moulding means 20 are arranged on the inner edge of each zone for connecting the reinforcers 13 to the plates 12 and for connecting the connecting members 15 to the plates 12 and reinforcers 13 and are formed by ceramic panels 21a, 21b and 22a, 22b.

One panel 22a is arranged on the inner edge of the connecting zone between one of the longitudinal edges of each reinforcer 13 and the main surface of the corresponding plate 12 and one panel 22b is arranged on the inner edge of the connecting zone between the other longitudinal edge of each reinforcer 13 and the main surface of the corresponding plate 12.

Moreover, a panel 21a is located on the inner edge of the connecting zone between the longitudinal edge 15a of the connecting member 15 and the main surfaces of the plates 12 and a panel 21b is arranged on the inner edge of the connecting zone between the longitudinal edge 15b of the connecting member 15 and the main surfaces of said plates 12.

The panels 21a and 21b form a continuous line and have a triangular section with rounded apexes so as to fit the shape of the connection between the reinforcers 13, the connecting member 15 and the plates 12, as shown in Fig. 4.

These panels 21a and 21b are each mounted on a support 23, made of steel, for example (Fig. 4).

As shown in Fig. 6, the panels 21a and 21b are formed by independent elements 28 connected to one another by a tensioning cable 29 passing through said elements 28.

A panel 22a is arranged on the inner edge of the connecting zone between the side edge 15c of the connecting member 15 and the adjacent reinforcer 13 and a panel 22b is arranged on the inner edge of the connecting zone between the side edge 15d of the connecting member 15 and the reinforcer 13 adjacent to this side edge.

The panels 22a and 22b are mounted on a support 24,

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made of steel, for example (Fig. 5).

As shown in Fig. 7, the panels 22a and 22b are formed by the elements 25 of rectangular section articulated to one another in order to fit the radius of curvature of the reinforcers 13 and the connecting members 15.

Each element 25 has a groove 26 on its surface facing the weld seam.

The supports 23 and 24 can be welded to the plates 12 and the reinforcers 13 or they may be fixed to said plates and said reinforcers by suitable connecting means.

The girders 10 are assembled as follows.

First of all, the ceramic panels 21a and 21b are placed on the inner edge of each connecting zone of the reinforcers 13 to the main surfaces of the corresponding rectangular plate 12 and a reinforcer 13 is welded onto each main surface of a rectangular plate 12 from outside in order to form sections 11, then the sections 11 are welded end to end directly on site in order to produce the girder 10.

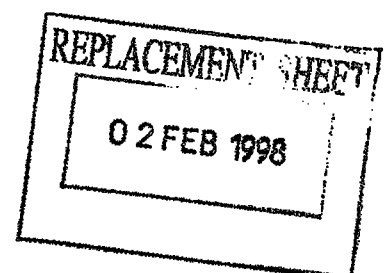
Then, the ceramic panels 21a, 21b and 22a, 22b are placed on the inner edge of each connecting zone of the connecting member 15 for the plates 12 and reinforcers 13, and each connecting member 15 is welded from outside onto the main surface of the plates 12 and onto the edges of the adjacent reinforcers 13 in order to form continuous reinforcers on each side of said plates.

The ceramic panels 21a, 21b and 22a, 22b, whilst facilitating the work of the welders, support and mould the roots of the weld seams, thus making it possible to achieve progressive attachment of the different parts to one another with a reduced risk of defects and consequently better fatigue resistance.

Moreover, the assembly tolerances of the parts are greater, thus making it possible to reduce the cost of preparing the parts and thereby increase the speed of execution of the welds on the ceramic panels, requiring

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a less qualified workforce.





CLAIMS

1. Process for assembling the girders (10) of the support legs (2) of an oil-drilling platform, wherein:

a reinforcer (13) in the form of a half-shell is welded from the outside onto each main surface of a rectangular plate (12), said rectangular plate (12) comprising on each of its side faces teeth (14) forming a rack,

a plurality of rectangular plates (12) fitted with said reinforcers (13) are welded end to end to form a girder (10), each reinforcer (13) being shorter in length than a plate (12) so as to define, at the location of the weld between the plates (12), a free space between two adjacent reinforcers (13),

a connecting member (15) in the form of a half-shell is positioned level with each free space and on an extension of the reinforcers (13),

and each connecting member (15) is welded from the outside on to the main surface of the plates (12) and on to the edges of the adjacent reinforcers to form continuous reinforcers on each side of said plates, characterised in that, prior to the positioning and welding of each reinforcer (13) and each connecting member (15), a ceramic panel (21a, 21b; 22a, 22b) adapted to the profile of each connecting zone and intended to mould the root of the weld seam is placed on the inner edge of each connecting zone between, on the one hand, the reinforcer (13) and the plates (12) and, on the other hand, the connecting member (15) and the plates (12) and reinforcers (13).

2. Apparatus comprising girders assembled by the assembly process according to claim 1, the girders (10) forming the support legs (2) of an oil-drilling platform, each girder comprising sections (11) each of

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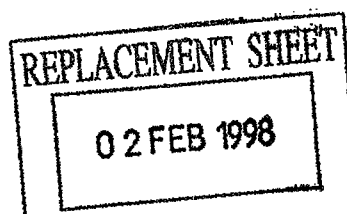


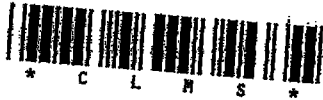
- 11 -

which is formed by a rectangular plate (12) intended to be butt-welded to the rectangular plate (12) of the adjacent sections (11) and comprising, on each of its side faces, teeth (14) forming a rack, a reinforcer (13) in the form of a half-shell welded to each main surface of the rectangular plate (12), each reinforcer (13) being shorter in length than a plate (12) so as to define a free space at the location of the weld between two adjacent plates (12), and connecting members (15) in the form of half-shells welded to each main surface of the plates (12) and the edge of each adjacent reinforcer (13) in order to form continuous reinforcers on each side of said plates (12), characterised in that it comprises means for welding, on the one hand, the reinforcers (13) to the main surfaces of the plates (12) and, on the other hand, the connecting members (15) to the main surfaces of the plates (12) and to the edges of each adjacent reinforcer (13) and means (21a, 21b; 22a, 22b) for moulding the root of the weld seams of the reinforcers (13) and the connecting members (15), located on the inner edge of each connecting zone of said reinforcers (13) with the rectangular plates (12) and said connecting members (15) with the rectangular plates (12) and the reinforcers (13).

3. Apparatus according to claim 2, characterised in that the means for moulding the root of the weld seams consist of ceramic panels (21a, 21b; 22a, 22b) mounted on a support (23, 24) connected to the girder (10) by connecting means.

4. Apparatus according to claim 3, characterised in that the ceramic panels (21a, 21b) adapted to mould the roots of the weld seams of the reinforcers (13) and the connecting members (15) with the rectangular plates (12) have a section in the shape of a triangle with rounded apexes.



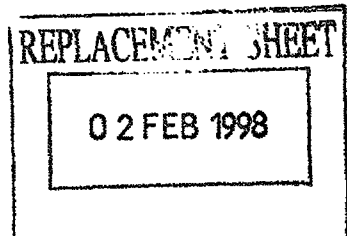


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5. Apparatus according to claim 4, characterised in that the panels (21a, 21b) are formed by independent elements (28) connected to one another by a tensioning cable (29) passing through said elements.

6. Apparatus according to claim 3, characterised in that the ceramic panels (22a, 22b) intended to mould the roots of the weld seams between the connecting members (15) and the reinforcers (13) are formed by elements (25) articulated on one another so as to adapt to the radius of curvature of said reinforcers (13).

7. Apparatus according to claim 6, characterised in that each element (25) is rectangular in section and comprises a groove (26) on its surface facing the weld seam.



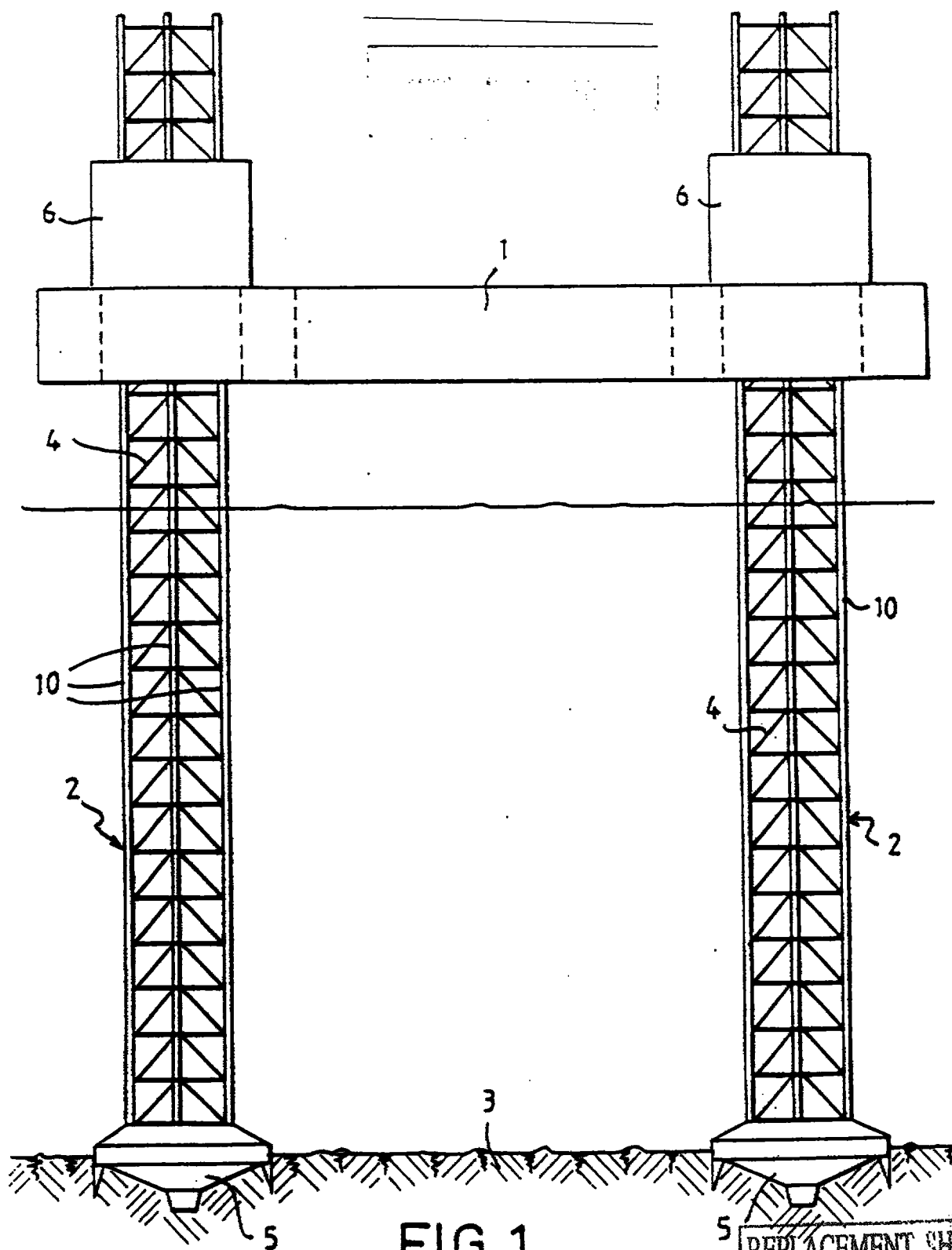


FIG. 1

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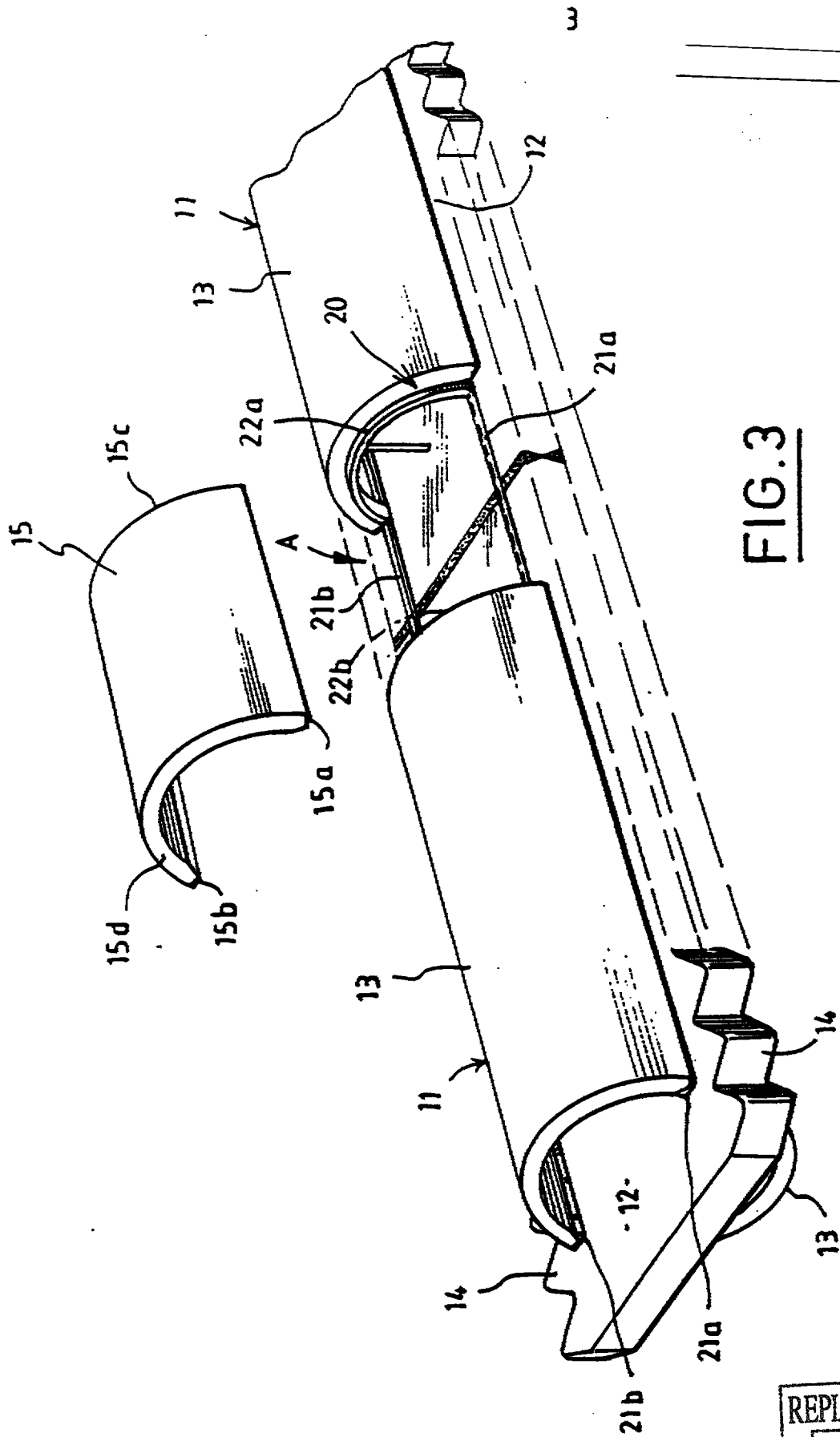


FIG. 3

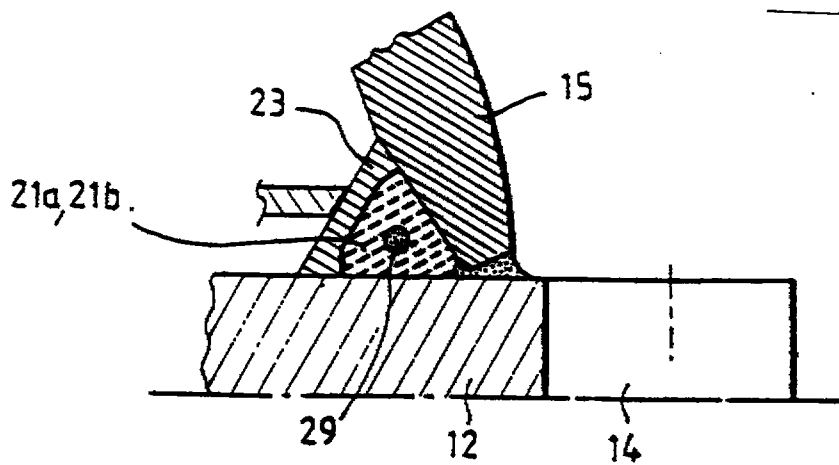


FIG. 4

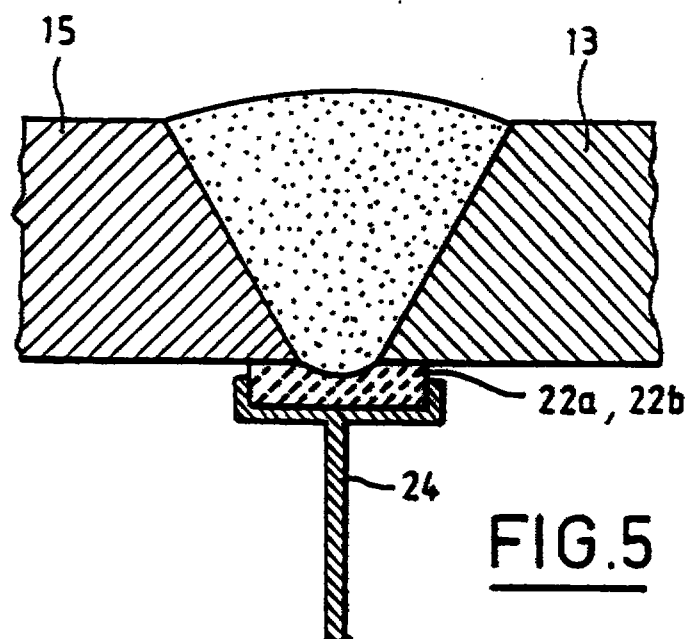


FIG. 5

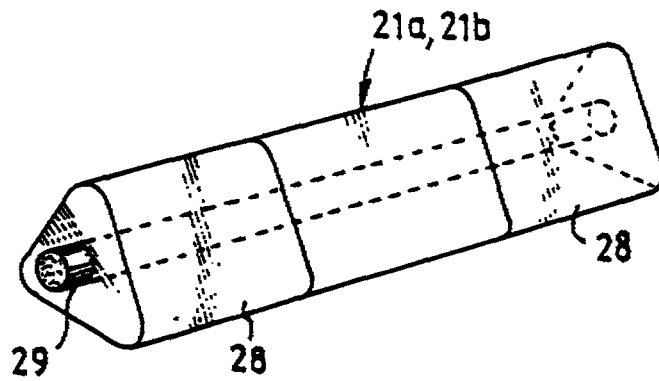


FIG. 6

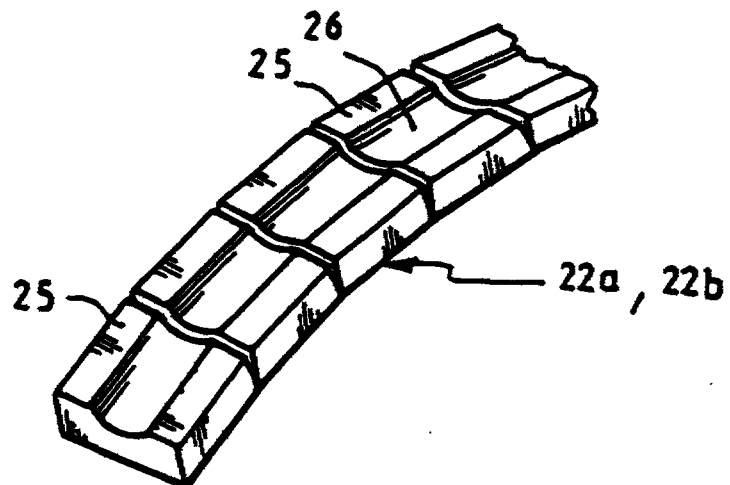


FIG. 7

- 13 -

Method and device for assembling the chords of the legs
for supporting an oil platform

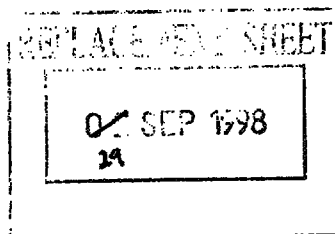
ABSTRACT

The subject of the invention is a method for assembling the chords (10) of the legs for supporting an oil platform, in which a stiffener (13) is welded onto each main face of a rectangular plate (12), several rectangular plates (12) equipped with the said stiffeners (13) are butt-welded together in order to form a chord (10), the said stiffeners leaving a free space between them, a joining piece (15) is positioned in the region of each free space and in extension of the stiffeners (13), and each joining piece (15) is welded from the outside. Prior to positioning and welding each stiffener (13) and each joining piece (15), there is placed on the internal edge of each zone at which the stiffener connects with the plates (12) and the joining piece (15) connects with the plates (12) and the stiffeners (13), a ceramic strip (21a, 21b; 22a, 22b) matched to the profile of each zone of connection and intended to shape the root of the weld bead.

Another subject of the invention is a device for implementing this method.

Fig. 3

SINGAPORE PATENT
GRANTED



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REPLACEMENT SHEET

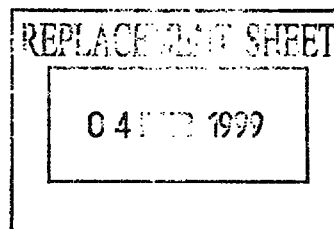
- 13 -

PROCESS AND DEVICE FOR ASSEMBLING THE FLANGES OF THE SUPPORTING-LEGS
OF AN OIL-PLATFORM

The subject of the invention is a method for assembling the chords (10) of the legs for supporting an oil platform, in which a stiffener (13) is welded onto each main face of a rectangular plate (12), several rectangular plates (12) equipped with the said stiffeners (13) are butt-welded together in order to form a chord (10), the said stiffeners leaving a free space between them, a joining piece (15) is positioned in the region of each free space and in extension of the stiffeners (13), and each joining piece (15) is welded from the outside. Prior to positioning and welding each stiffener (13) and each joining piece (15), there is placed on the internal edge of each zone at which the stiffener connects with the plates (12) and the joining piece (15) connects with the plates (12) and the stiffeners (13), a ceramic strip (21a, 21b; 22a, 22b) matched to the profile of each zone of connection and intended to shape the root of the weld bead.

Another subject of the invention is a device for implementing this method.

Fig. 3



Method and device for assembling the chords of the legs for supporting an oil platform.

ABSTRACT

The subject of the invention is a method for assembling the chords (10) of the legs supporting an oil platform, in which a stiffener (13) is welded onto each main face of a rectangular plate (12), several rectangular plates (12) equipped with the said stiffeners (13) are butt-welded together in order to form a chord (10), the said stiffeners leaving a free space between them, a joining piece (15) is positioned in the region of each free space and in the extension of the stiffeners (13), and each joining piece (15) is welded from the outside. Prior to positioning and welding each stiffener (13) and each joining piece (15), there is placed on the internal edge of each zone at which the stiffener connects with the plates (12), and the joining piece (15) connects with the plates (12) and the stiffeners (13), a ceramic strip (21a, 21b; 22a, 22b) matched to the profile of each zone of connection and intended to shape the root of the weld bead.

The subject of the invention is also a device for the implementation of this method.

Fig. 3

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