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(54) **SCAFFOLDING BOARD WITH DETACHABLE HOOK FITTING**

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PLANCHE D'ECHAFAUDAGE DOTÉE D'UN ACCESSOIRE A CROCHETS DETACHABLE

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Description

Field of the Invention

[0001] The present invention concerns a scaffolding board including a section with a substantially flat surface for persons staying on this surface, and including a fitting with hooks at the end of the section for securing the assembled scaffolding board on a transverse beam, where the fitting includes at least one lug, and where the section includes at least one opening provided in the surface and spaced apart from the end of the section for accommodating a lug in the opening, and where the fitting furthermore includes a flat part between the at least one lug and the hooks for bearing against the underside of the section.

Description of Prior Art

[0002] Scaffolding boards of the type with a board surface, which has a downwards facing L-shaped side member at each longitudinal side for substantially constituting a total C-shaped cross-section, are known. Such a scaffolding board is shown on Fig. 1.

[0003] At each end of such a scaffolding board, by means of rivets or hooks there is fastened a set of hooks that engage in over transverse scaffolding beams. When making scaffolding boards, it is important to minimise the time for making and the number of manufacturing steps for competitive reasons.

[0004] Furthermore, from GB-A-1 400 973 it is known with a scaffolding board of the type mentioned in the introduction. The scaffolding boards described in this publication are held in place as the fitting is saddle-shaped, so that it is symmetric at both sides of the transverse beam and thereby loaded on both sides of the transverse beam. If one scaffolding board is removed, the weight on one side of the transverse beam will cause the fitting to be twisted about the transverse beam, and in the worst case, the lug may be twisted out of the opening. This constitutes a hazard and is therefore a drawback which is connected with the prior art scaffolding board.

Description of the Invention

[0005] It is therefore the intention of the invention to provide a scaffolding board which relieves the drawbacks associated with prior art scaffolding boards, and which require fewer resources in the manufacturing thereof than prior art scaffolding boards.

[0006] This purpose is fulfilled by a scaffolding board of the kind mentioned in the introduction, which is peculiar in that the lug rests on the edge of the opening.

[0007] The making of such a scaffolding board is simple and requires fewer resources than by prior art scaffolding boards, which is described more closely in the following. The section of the scaffolding board can be made in long runs, e.g. by extrusion, and adapted to the

correct length for scaffolding boards. The scaffolding boards may optionally be provided with a pattern of holes and projections in order to reduce weight and to prevent people walking on the scaffolding board from slipping on the surface. Fittings can be made separately, with hooks on one side of a flat part and lugs on the other side of the flat part. These fittings are passed into the end of the section, and the lugs are provided in corresponding openings in the section. Under load, where the hooks grip over the transverse beam and workers are standing on the scaffolding board, the fitting is thereby locked to the section, which will be effected irrespectively whether scaffolding boards are disposed in succession, resting on the transverse beam, and irrespectively whether possible succeeding scaffolding boards have about the same weight. Thus there will be no risk that a twist turning the fitting about the transverse beam occurs. Thus it is possible to avoid the risk that the lug is twisted out of the opening. In this way, assembly of the scaffolding board is rapid and easy. In addition, it is possible to replace a set of hooks if this would appear necessary.

[0008] The fitting has typically two lugs, and the section has two corresponding openings for receiving the two lugs. In a concrete embodiment, the fitting has an angular part which is rectangular in relation to the flat part in order to at least partly cover the end of the section. In addition, the hooks may be fastened to this angular part. This measure makes the fitting very stable in transverse direction, and the mounting is very simple.

[0009] In one embodiment, the section includes a pair of sectional side members, and the fitting includes a pair of side pieces for bearing against the inner side of the side members of the section. In this way it is ensured that the fitting is held securely in the section without any lateral slipping of the fitting in the section. Besides, the side members of the section can be provided with means for a fixing device for fixing the fitting in relation to the section. For example, the means for a fixing device may include holes for accommodating screw bolts in the holes. The fitting and the section will typically each have two holes for accommodating screw bolts in the holes. Two bolts in each end are only half as many screw bolts or screws traditionally used in scaffolding boards according to prior art. This means saving of time and costs compared with prior art. Besides, this entails that the scaffolding board achieves stability against outwards bending of the side members under load from above.

[0010] Alternatively, the fixing device may include a snap lock, where a resilient safety tab is acting as a barb against separation of the fitting from the section. This form in particular ensures very rapid assembly of the scaffolding board.

[0011] In another embodiment, the section has a surface which is connected with L-shaped side members at a right angle from the surface in order to constitute an edged C-section. Such C-sections are easy to make and suited as scaffolding boards.

[0012] In order to prevent that a worker on a scaffolding

board according to the invention stumbles over the lugs, in a further embodiment the openings for the lugs may have an edge which is lowered under the level of the surface so that the lugs, after being received in the openings, do not substantially project above the level of the scaffolding board.

[0013] The fitting may furthermore include a plate which is pivotably connected to the fitting and which, after placing the hooks on a beam, by action may engage under the beam and prevent that the hooks can be lifted off the beam.

[0014] As it appears from the above, the invention provides for a number of advantages which are not described in the prior art to the same extent. The advantages include simple construction, rapid and easy assembly and separation, fewer components, good load distribution between fitting and section, and increased security during use.

Short Description of the Drawing

[0015] The invention is described more closely with reference to the drawing, where

- Fig. 1 shows a drawing of a scaffolding board according to prior art in various perspective views;
- Fig. 2 shows a drawing of a scaffolding board according to the invention in three perspective views;
- Fig. 3 shows a photo of two scaffolding boards according to the invention as seen from above and from below.

Detailed Description of the Invention

[0016] On Fig. 1 is shown a drawing of a scaffolding board 1 according to prior art in three different perspective views, namely as cross-section 1, longitudinal section and as seen from above. The board has a board surface 2 two downwards facing L-shaped sections as side members 3 with back 5 and bottom flange 6 in order thereby to constitute an assembled and more or less sharp-edged C-shaped cross-section. Scaffolding boards are typically provided with holes 4 so that dust and rain do not accumulate on the surface 2. At each end of such a scaffolding board, a set of hooks 9, which grip in over transverse scaffolding beams 10, are fastened by means of rivets or screws 7 and suitable fittings 8. Assembling the scaffolding board during manufacturing requires several steps, where several fittings 8 and several screws 7 are assembled into a unit.

[0017] In the scaffolding board according to the invention, as shown in perspective view on Fig. 2, each set of hooks 9 are welded onto a fitting 11 which is fastened to the scaffolding board 1. Fig. 2A shows one end of the scaffolding board as seen towards this end, Fig. 2B shows the end of the scaffolding board as seen from the side, and Fig. 2C a part of the scaffolding board seen obliquely from below.

[0018] In comparison, photos of scaffolding boards according to the invention are shown on Fig. 3, from above in Fig. 3A and from below in Fig. 3B.

[0019] The fitting 11 has a flat part 16 which is seen best on Fig. 2C and which after mounting is bearing on the underside 17 of the C-section 1' and an angular part 18 on which the hooks 9 are welded. The fitting 11 furthermore includes a set of curving lugs 13 in continuation of the flat part 16 for engaging corresponding openings 12 in the surface of the scaffolding board 2. For assembling the scaffolding board 1, the fitting 11 with the hooks 9 is inserted in the end of the C-section 1' of the scaffolding board at an angle, where the hooks 9 are pointing obliquely downwards in relation to the C-section 1'. With this orientation, the curving lugs 13 are passed into the openings 12, after which the fitting 11 is tilted upwards until the upper edge of the flat part 16 between the lugs 13 and the hooks 9 rest against the lower edge 17 of the C-section 1'. At the same time, each of the lugs 13 will rest on the edge 15 of the respective opening 12. When the hooks 9 rest on a beam, the load on the scaffolding board 1 from above will prevent the lugs 13 from sliding out of the openings 12. Thereby is achieved a rapid assembly of the fittings 11 prefabricated by machine with hooks 9 and the C-sections 1' of the scaffolding boards 1.

[0020] The system has further advantages, such as increased security. For example, a downwards directed load on the scaffolding board 1 after mounting with the hooks 9 on respective beams only entails a load on the lugs 13 in the openings 12, but no load on possible screws, bolts or other fittings, as known from prior art.

[0021] For further securing, the C-section 1' and the fitting 11 are, however, only provided with a fixing device, in this case holes 14, 14' in the side members 3 of the section 1', see Fig. 2B, and in the corresponding side pieces 19 of the fitting 11, see Fig. 2C, in which bolts may be fastened. Thereby increased stability is achieved which counteracts deflection of the side members 3 under load from above, for example when a worker moves on the board. This fixing device may also be achieved with self-tapping screws, or even with a snap lock where a resilient safety tab can act as a barb against separation of the two assembled parts, i.e. the C-section 1' and the fitting 11. In particular, a snap lock may minimise the assembling time for the board.

[0022] As there is no load on this fixing device under load from above on the scaffolding board, the dimensioning is not critical. Moreover, loosening a bolt or a screw through the holes 14, 14' will not imply any hazard, as the scaffolding plank will still be intact and fulfil its function without risk to the workers walking on the board.

[0023] In order to minimise the risk of a worker on the scaffolding board stumbling over the lugs 13, the part 15 of the opening 12 where the lug 13 engages the surface 2 of the scaffolding board may be recessed. In that case, during mounting the fitting is not to be tilted with the lugs 13 into the openings 12, but the fitting may be slid into the end of the C-shaped section 1' of the scaffolding

board until the lugs 13 engage the recessed part of the opening 12. In this way, the top side of the lugs 13 would be at level with the top side 2 of the scaffolding board. By such a combination of fittings 11 and C-section 1', the height of the fitting 11 may be adapted to the inner height of the C-section, as there is no need for tilting the fitting 11 during assembly. Furthermore, it will provide a good distribution of the forces under load from above. In that case also there will be no load on the fixing device, e.g. bolts or screws through the holes 14, 14', or alternatively a snap lock.

[0024] If the scaffolding board 1 is provided with projections and holes as shown on Fig. 3A and the projections have a height approximately corresponding to the height of the lug 13 when this is provided in the opening 12, these openings will provide for the lug not acting as an edge that is easily stumbled over.

[0025] As it appears from Fig. 3B, the scaffolding boards may be provided with a safety device so that the hooks are retained around a beam on which they rest. In this case, the safety device is a plate which is pivotably connected to the fitting, and which by correct positioning grips in under the beam and prevents the hooks from being lifted off the beam.

Claims

1. Scaffolding board (1) including a section (1') with a substantially flat surface (2) for persons staying on this surface, and including a fitting (11) with hooks (9) at the end of the section (1) for securing the assembled scaffolding board (1) on a transverse beam, where the fitting (11) includes at least one lug (13), and where the section (1') includes at least one opening (12) provided in the surface and spaced apart from the end of the section (1') for accommodating a lug (13) in the opening (12), and where the fitting (11) furthermore includes a flat part (16) between the at least one lug and the hooks (9) for bearing against the underside (17) of the section (1'), **characterised in that** the lug (13) rests on the edge of the opening (12).
2. Scaffolding board according to claim 1, wherein the fitting (11) has two lugs and the section (1') has two openings (12) for receiving the two lugs (13).
3. Scaffolding board according to claim 1 or 2, wherein the fitting (11) has an angular part (18) which is rectangular in relation to the flat part (16) in order thereby to at least partly cover the end of the section (1') where the hooks (9) are fastened to the angular part (18).
4. Scaffolding board according to any preceding claim, wherein the section (1') includes a pair of sectional side members (3), and the fitting includes a pair of

side pieces (19) for bearing against the inner side of the side members of the section (1').

5. Scaffolding board according to claim 4, wherein the side pieces (19) of the fitting and the side members (3) of the section are provided with means for a fixing device for securing the fitting (11) in relation to the section (1').
6. Scaffolding board according to claim 5, wherein the means for a fixing device includes holes for accommodating screw bolts in the holes.
7. Scaffolding board according to claim 5, wherein the means for a fixing device includes a snap lock, where a resilient safety tab acts as a barb against separation of the fitting (11) from the section (1').
8. Scaffolding board according to any preceding claim, wherein the section (1') has a surface (2) which is connected with L-shaped side members (3) at a right angle from the surface, in order thereby to constitute a edged C-section.
9. Scaffolding board according to any preceding claim, wherein the at least one opening (12) of the section (1) for the lugs (13) has an edge which is lowered under the level of the surface (2) in order that the at least one lug (13) does not protrude substantially above the level of the surface (2) after being accommodated in the opening.
10. Scaffolding board according to any preceding claim, wherein the fitting includes a plate which is pivotably connected to the fitting and which, after placing the hooks on a beam, by action may engage under the beam and prevent that the hooks can be lifted off the beam.

Patentansprüche

1. Gerüstplatte (1), die ein Teilstück (1') mit einem im wesentlichen flachen Oberfläche (2) für darauf stehende Personen aufweist sowie ein Formstück (11) mit Haken (9) am Stirnende des Teilstücks (1) für die Befestigung der errichteten Gerüstplatte (1) auf einem Querbalken aufweist, wobei das Formstück (11) wenigstens einen Ansatz (13) aufweist, und wobei das Teilstück (1') wenigstens eine in der Oberfläche und in Abstand zum Ende des Teilstücks (1') zum Aufnehmen des Ansatzes (13) vorgesehene Öffnung (12) aufweist, und wobei das Formstück (11) weiterhin einen flachen Teil (16) zwischen dem wenigstens einen Ansatz und dem Haken (9) zum Stützen gegen die Unterseite (17) des Teilstücks (1') aufweist, **dadurch gekennzeichnet, dass** der Ansatz (13) auf der Kante der Öffnung (12) ruht.

2. Gerüstplatte nach Anspruch 1, wobei der Formstück (11) zwei Ansätze aufweist, und das Teilstück (1') weist zum Aufnehmen der zwei Ansätze (13) zwei Öffnungen (12) auf.
3. Gerüstplatte nach Anspruch 1 oder 2, wobei das Formstück (11) einen bezüglich des flachen Teils (16) rechtwinklig gewinkelten Teil (19) aufweist um das Ende des Teilstücks (1') wenigstens teilweise abzudecken, wobei die Haken (9) zum gewinkelten Teil (18) befestigt sind.
4. Gerüstplatte nach irgendeinem der vorhergehenden Ansprüchen, wobei das Teilstück (1') ein Paar seitliche Teilstücken (3) aufweist, und das Formstück weist ein Paar Seitenstücken (19) zum Stützen gegen die Innenseite der Seitenstücken des Teilstücks (1') auf.
5. Gerüstplatte nach Anspruch 4, wobei die Seitenstücken (19) des Formstücks und die Seitenstücken (3) des Teils mit Mitteln eines Befestigungselements zur Befestigung des Formstücks (11) bezüglich des Teilstücks (1') versehen sind.
6. Gerüstplatte nach Anspruch 5, wobei die Mittel des Befestigungselements Löcher zum Aufnehmen von Schraubenbolzen in den Löchern aufweist.
7. Gerüstplatte nach Anspruch 5, wobei die Mittel des Befestigungselements einen Schnappschloss umfasst, wobei ein elastischer Sicherheitslappen als Widerhaken gegen Trennung des Formstücks (11) vom Teilstück (1') wirksam ist.
8. Gerüstplatte nach irgendeinem der vorhergehenden Ansprüchen, wobei das Teilstück (1') eine Oberfläche (2) aufweist, die rechtwinklig bezüglich der Oberfläche mit L-förmigen Seitenstücken (3) verbunden ist um dabei einen kantigen C-Querschnitt zu bilden.
9. Gerüstplatte nach irgendeinem der vorhergehenden Ansprüchen, wobei die wenigstens eine Öffnung (12) des Teilstücks (1) für die Ansätze (13) eine Kante aufweist, die unter die Lage der Oberfläche (2) abgesenkt ist, so dass der wenigstens eine Ansatz (13) nicht wesentlich über die Lage der Oberfläche (2) nach der Unterbringung in der Öffnung hinaufragt.
10. Gerüstplatte nach irgendeinem der vorhergehenden Ansprüchen, wobei das Formstück eine mit dem Formstück drehbar verbundene Platte umfasst, und die nach der Unterbringung der Haken auf einem Balken durch Tätigkeit den Balken untergreifen und das Hochheben der Haken vom Balken verhindern kann.

Revendications

1. Planche d'échafaudage (1) comportant une section (1') avec une surface sensiblement plate (2) pour les personnes présentes sur cette surface, et comportant un élément d'assemblage (11) avec des crochets (9) au niveau de l'extrémité de la section (1) afin de fixer la planche d'échafaudage assemblée (1) sur une poutrelle transversale, dans laquelle l'élément d'assemblage (11) comporte au moins une patte (13), et dans laquelle la section (1') comporte au moins une ouverture (12) formée sur la surface et séparée de l'extrémité de la section (1') afin de recevoir une patte (13) dans l'ouverture (12), et dans laquelle l'élément d'assemblage (11) comporte, en outre, une partie plate (16) entre la au moins une patte et les crochets (9) afin de porter contre la face inférieure (17) de la section (1'), **caractérisée en ce que** la patte (13) repose sur le rebord de l'ouverture (12).
2. Planche d'échafaudage selon la revendication 1, dans laquelle l'élément d'assemblage (11) comporte deux pattes et la section (1') comporte deux ouvertures (12) afin de recevoir les deux pattes (13).
3. Planche d'échafaudage selon la revendication 1 ou 2, dans laquelle l'élément d'assemblage (11) présente une partie angulaire (18) qui est perpendiculaire à la partie plate (16) dans le but de recouvrir ainsi au moins partiellement l'extrémité de la section (1') à l'endroit où les crochets (9) sont fixés sur la partie angulaire (18).
4. Planche d'échafaudage selon l'une quelconque des revendications précédentes, dans laquelle la section (1') comporte une paire d'éléments latéraux de section (3), et l'élément d'assemblage comporte une paire de pièces latérales (19) destinées à porter contre la face interne des éléments latéraux de la section (1').
5. Planche d'échafaudage selon la revendication 4, dans laquelle les pièces latérales (19) de l'élément d'assemblage et les éléments latéraux (3) de la section comportent des moyens formant un dispositif de fixation afin d'empêcher la rotation de l'élément d'assemblage (11) sur la section (1').
6. Planche d'échafaudage selon la revendication 5, dans laquelle le moyen formant un dispositif de fixation comporte des orifices destinés à recevoir des vis dans les orifices.
7. Planche d'échafaudage selon la revendication 5, dans laquelle le moyen formant un dispositif de fixation comporte un verrou à encliquetage, dans lequel une patte de sécurité élastique sert de broche em-

pêchant la séparation de l'élément d'assemblage (11) par rapport à la section (1').

8. Planche d'échafaudage selon l'une quelconque des revendications précédentes, dans laquelle la section (1') présente une surface (2) qui est raccordée à des éléments latéraux en forme de L (3) sous un angle droit par rapport à la surface, dans le but de constituer ainsi une section en C à rebord. 5
- 10
9. Planche d'échafaudage selon l'une quelconque des revendications précédentes, dans laquelle la au moins une ouverture (12) de la section (1) pour les pattes (13) présente un rebord qui est situé au-dessous du niveau de la surface (2) dans le but que la au moins une patte (13) ne vienne pas sensiblement en saillie au-dessus du niveau de la surface (2) après avoir été reçue dans l'ouverture. 15
10. Planche d'échafaudage selon l'une quelconque des revendications précédentes, dans laquelle l'élément d'assemblage comporte une plaque, qui est reliée de manière à pouvoir pivoter à l'élément d'assemblage, et qui, après mise en place des crochets sur une poutrelle, peut sous cette action s'assembler sous la poutrelle et empêcher le soulèvement des crochets par rapport à la poutrelle. 20 25

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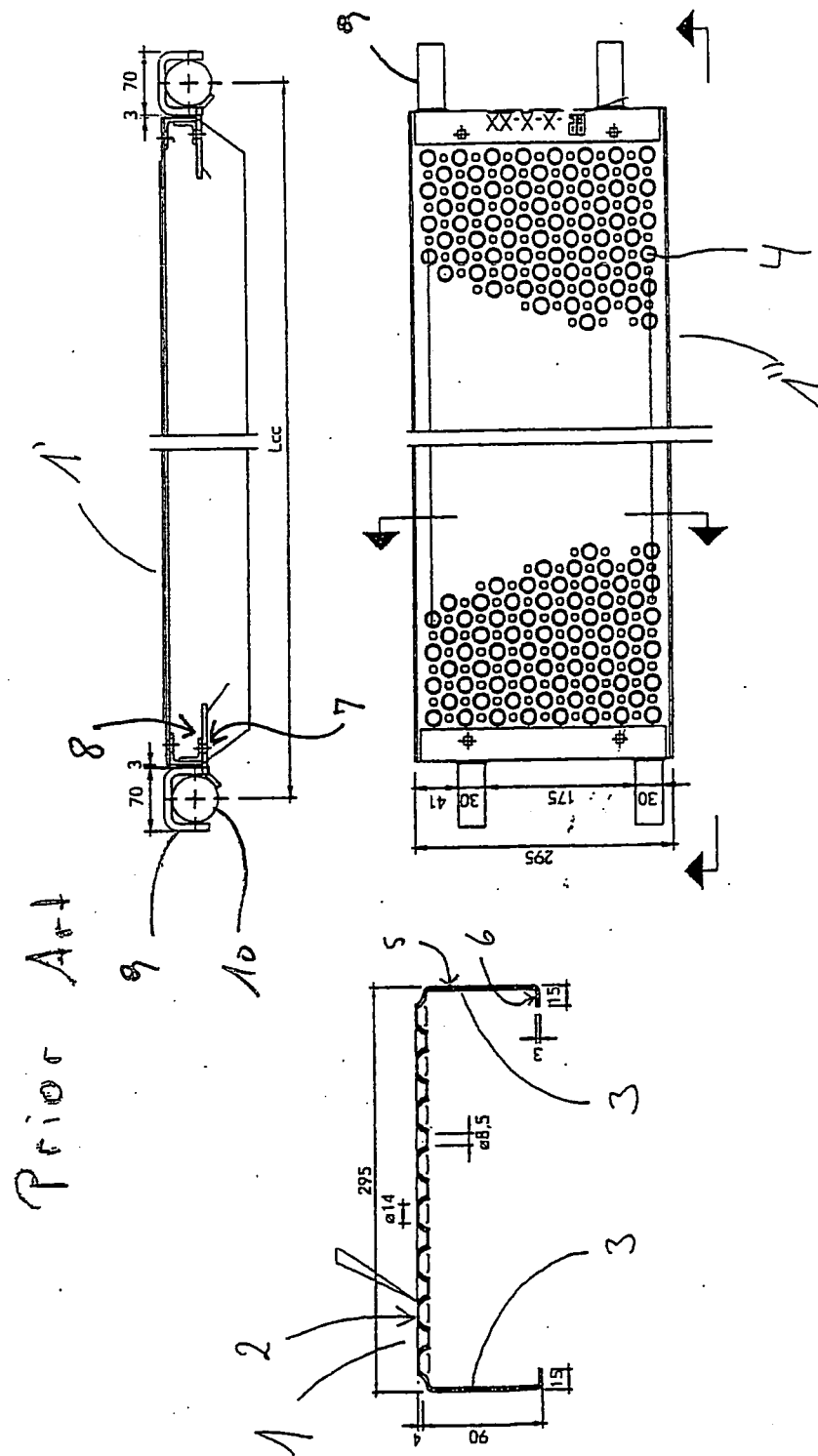
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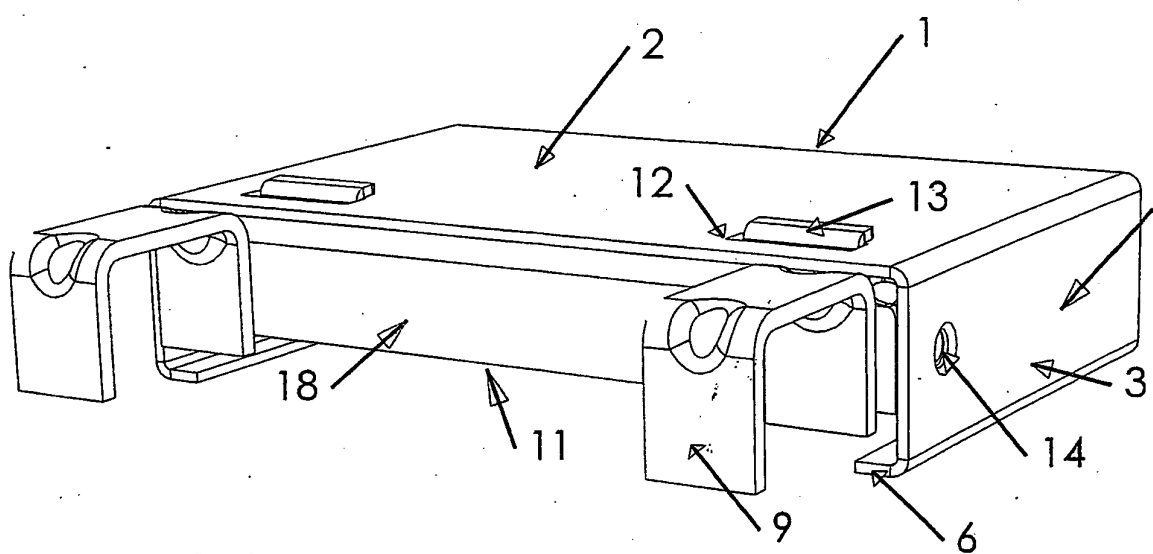


FIG. 2A

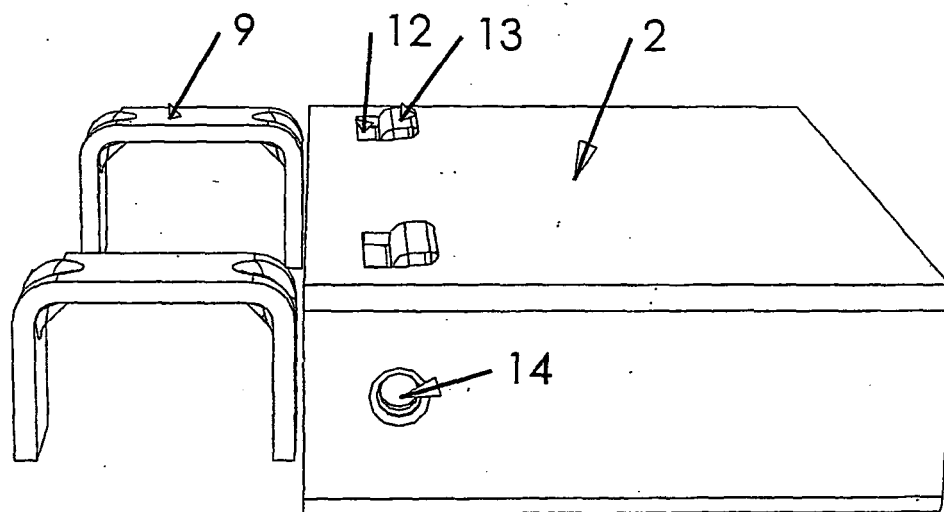


FIG. 2B

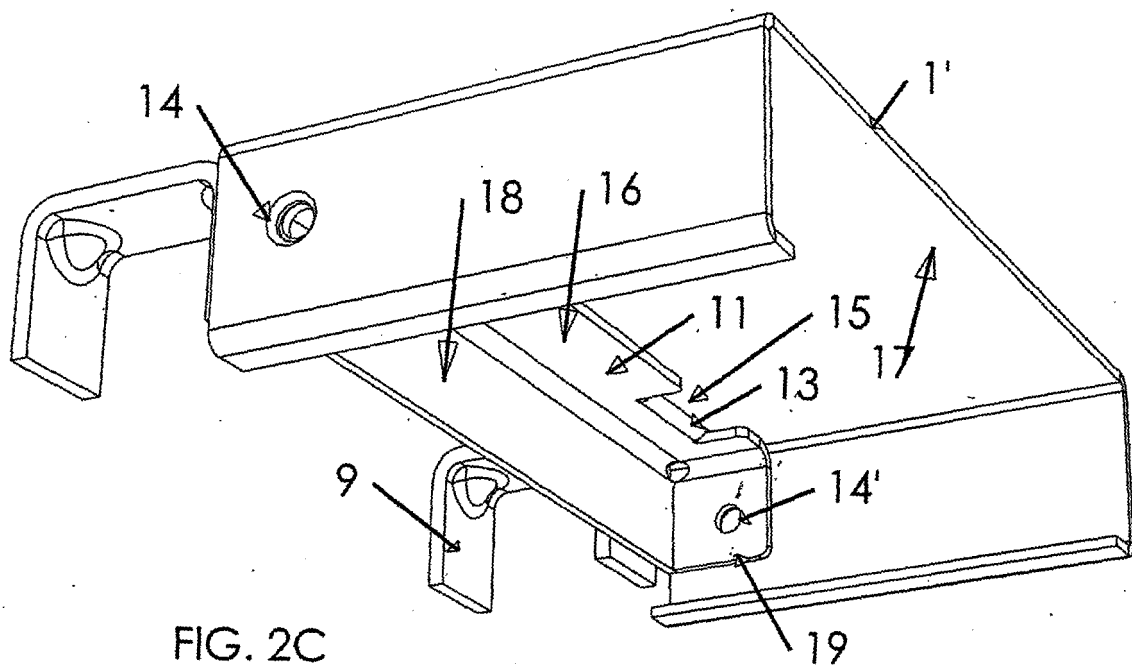


FIG. 2C

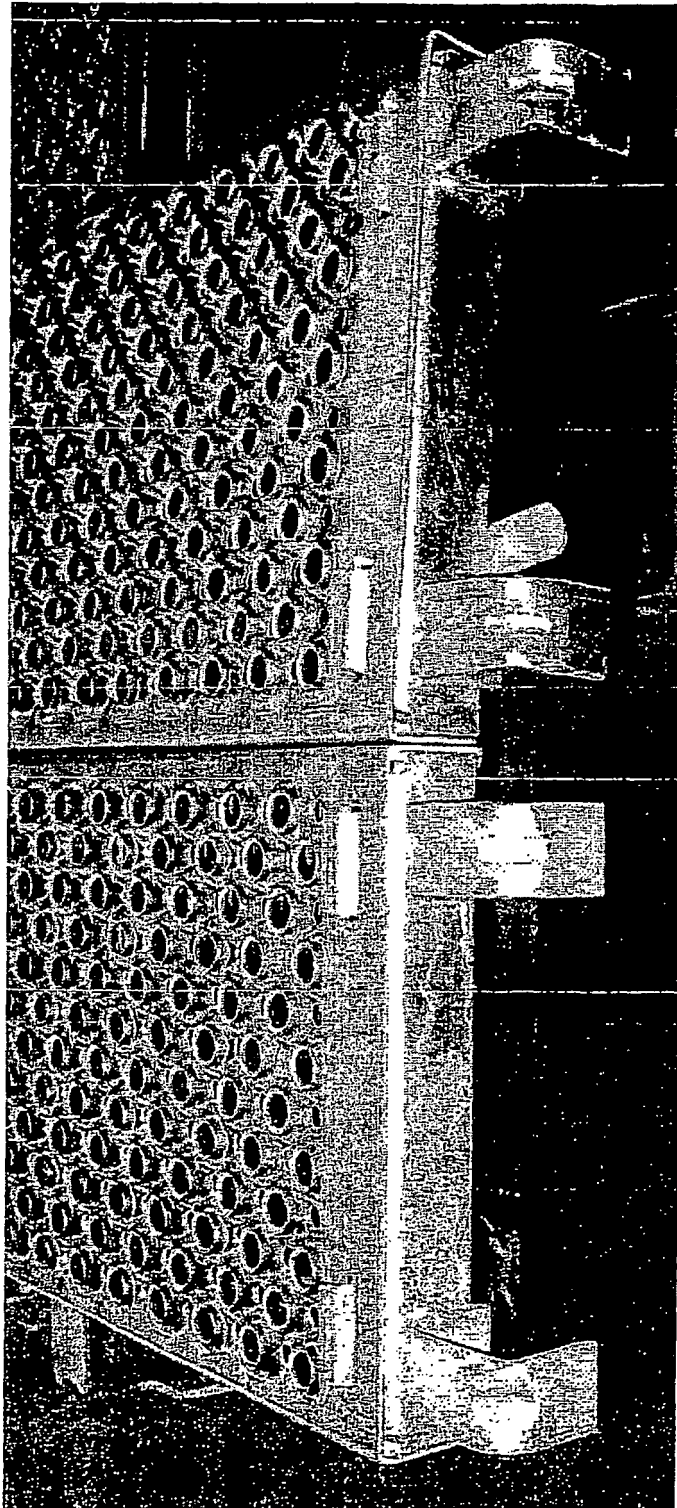


FIG. 3A

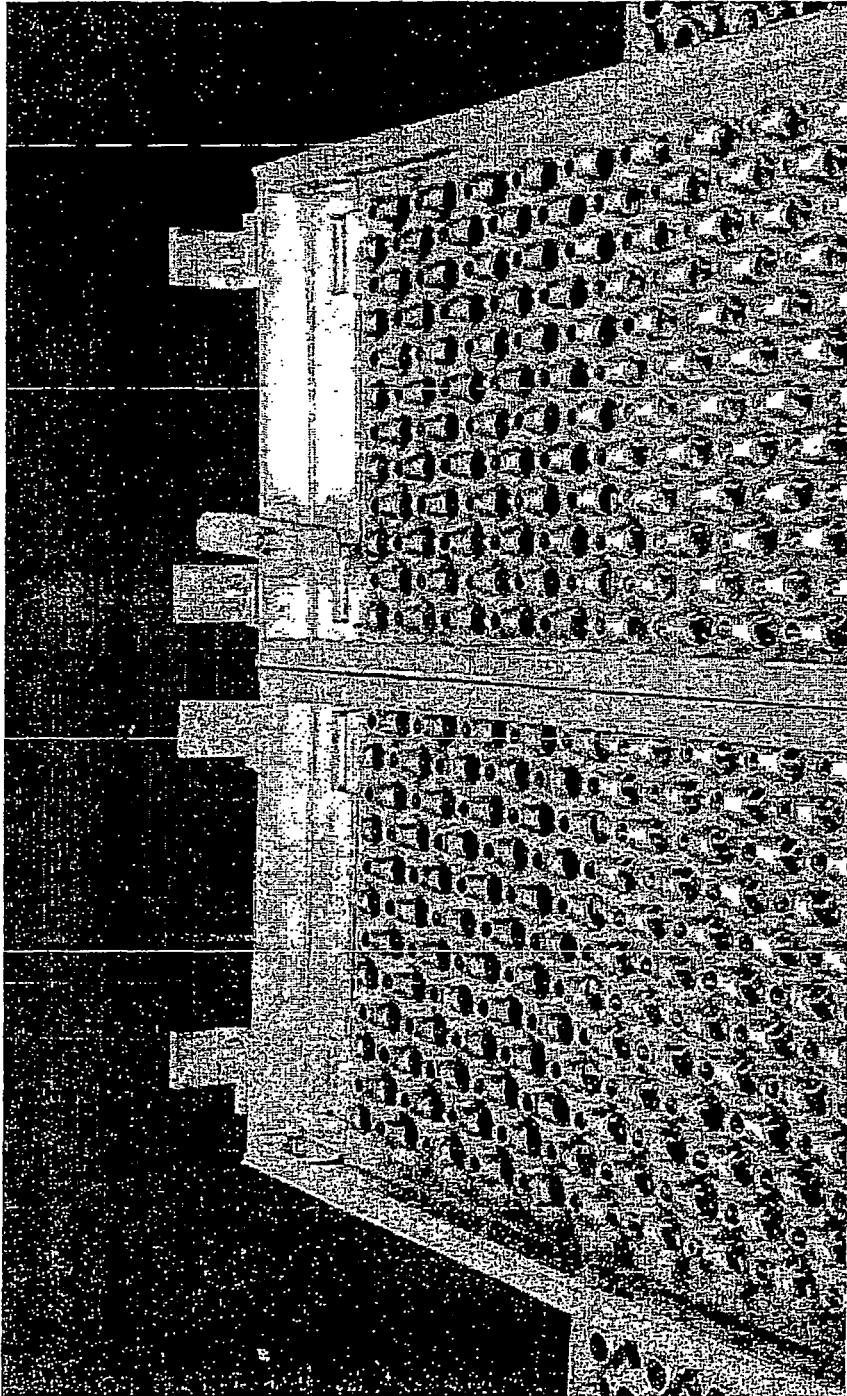


FIG. 3b

REFERENCES CITED IN THE DESCRIPTION

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