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(54) **Removable protection for intermediate stages of scaffolding**

(57) Removable protection which is mounted as means of protection for intermediate levels or stages mounted on scaffolds. Said removable member has two vertical members (1), a toeboard (2), an intermediate bar (3) mounted for protection and joining said vertical members, and some upper and lower means of fastening, consisting of a mooring hook (4) and of a U-shaped lower

piece (5) open at the bottom in association with a pin. The removable protection has an H-shaped general configuration formed by said vertical member and said intermediate bar. It allows assembly and dismantling in a quick and easy manner offering the necessary and statutory safety for undertaking work when an intermediate level is erected between two consecutive levels of a scaffold.

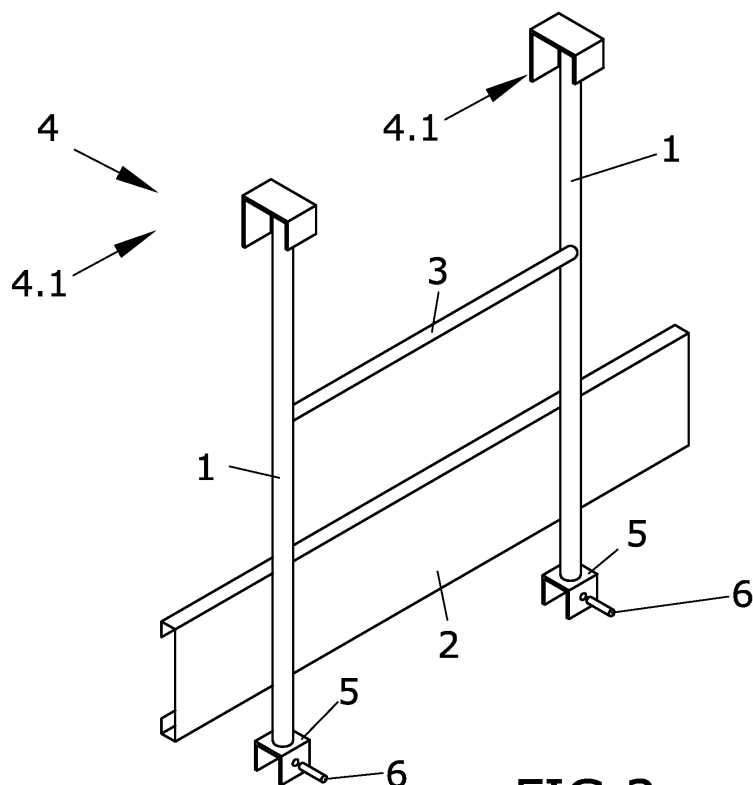


FIG.2

Description

OBJECT OF THE INVENTION

[0001] The object of the present invention is a removable protection which when fixed on the structure of a scaffold, provides the safety necessary on intermediate stages of a scaffold, which allows the work to develop safely and according to regulations.

[0002] The present invention is characterized in the special configuration of the members which form the removable protection, the means of fastening which it has, the toeboard which it includes, all of which so as to allow a safety member to be obtained, easily mounted and dismantled, conferring upon the scaffold the safety necessary to be able to undertake the work.

[0003] Therefore, the present invention falls within the ambit of scaffolding and in particular terms among the additional members and means for protection fixed thereon.

BACKGROUND OF THE INVENTION

[0004] Up until now, high structures of the scaffold type, have their own safety members incorporated therein which provide sufficient protection at each level defined in the structure.

[0005] In general terms, scaffolds have a number of fixed levels spaced at a height of two meters from each other. The spans left between levels must have protection consisting of a toeboard of about 15 cm, a handrail mounted at a height of 0.90 meters above the lower level, and an intermediate bar mounted at a height of about 0.50 meters above the lower level, all this with the object of protecting the feet, the knees or the actual waist.

[0006] The protection has to be arranged on the outside of the scaffold, and in the event that the scaffold is separated from the building by more than 20 cm, it must also have a protection similar to that explained on the inside. Otherwise, that is, the scaffold is not separated from the building by more than 20 cm, the protection arrangement is not necessary on the inside face of the scaffold.

[0007] Now, given the distance there is between the levels of the scaffolds, it generally becomes necessary to mount intermediate levels or stages which are at a distance of one meter above and below the lower and upper levels respectively.

[0008] These intermediate stages, must also have some means of protection like those described, that is with a toeboard of about 15 cm, a handrail mounted at about 90 cm above the intermediate stage, as well as an intermediate bar mounted at about 50 cm from the intermediate stage.

[0009] Since the handrail which protects the levels of a scaffold is at a height of between 0.9 and 1.30 meters with respect to the lower level, in relation with an intermediate stage, it would be at a distance of up to 0.30

meters above the intermediate stage, this handrail being considered as the protection toeboard of the intermediate stage. Another additional bar being mounted as intermediate bar, since the handrail would be formed by the actual structure of the scaffold.

[0010] That is, the means of protection which are being used at present for the intermediate stages consist of a tube which serves as a toeboard, and another additional tube fixed afterwards which serves as the intermediate bar.

[0011] These means of protection of intermediate stages, in addition to not complying with the regulations, since the mounting of a tube is not considered as toeboard protection, present drawbacks in their fastening, assembly and dismantling.

[0012] Therefore, the object of the present invention is a protection for intermediate stages, which is in accordance with the legislation, which is easily removable and which has sufficient and safe means of fastening which allows the work to be undertaken with sufficient safety.

DESCRIPTION OF THE INVENTION

[0013] The invention of removable protection for intermediate stages of scaffolding, has the purpose of providing the safety necessary on the intermediate stages mounted between two consecutive levels of a scaffold, which safety is achieved with the protection object of the invention, which is also intended to be easily removable and secured with sufficient guarantee.

[0014] The removable protection object of the invention basically consists of a tubular structure shaped in the form of an "H", that is, with two tubular end members parallel to each other, joined by a transversal tubular member, which will perform the functions of intermediate bar, there also being a toeboard fixed to the vertical tubular members at a convenient height for protection.

[0015] Also the removable protection object of the invention, has some means for fastening to the scaffolding. The means of fastening are mounted on the ends of the vertical tubular members parallel to each other.

[0016] The means of fastening the upper ends of the tubular members, consist of some mooring hooks which are welded to the tubular members and from which emerges a length of fishplate parallel to the tubular member separated from the same by a sufficient distance to allow the seating of a tubular member of the scaffolding.

[0017] Moreover, on the lower ends of the vertical tubular members there is a U-shaped mooring piece welded open on its lower part, which has an opening of dimensions such that it can accommodate a member of the scaffolding in its interior, generally a tubular member.

[0018] With the object of assuring the safe assembly of the U-shaped mooring on the scaffolding, the "U" has a pin which crosses through opposing orifices, so that with a tubular member housed in its interior and having passed the pin through the opposing orifices, a secure

fastening is obtained, which cannot be removed accidentally, or by the effect of a blow.

[0019] Thus, due to the upper mooring hook and to the U-shaped mooring on the lower ends of the tubular members, it is possible to hang and fasten in a secure manner the removable protection for intermediate stages of scaffolding.

EXPLANATION OF THE FIGURES

[0020] To complete the description that is being made and with the object of assisting in a better understanding of the characteristics of the invention, this description is accompanied with a set of drawings, as an integral part thereof, wherein by way of illustration and not restrictively, the following has been represented:

Figure 1, shows a representation in elevation and in side view of the removable protection object of the invention.

Figure 2, shows a representation of the removable protection object of the invention in perspective wherein some of the details described can be appreciated with greater clarity.

Figure 3, shows a representation in perspective of a scaffold wherein the different levels are observed, as well as the intermediate stages, with the removable protection object of the invention.

PREFERRED EMBODIMENT OF THE INVENTION

[0021] In the light of the aforementioned figures, a preferred mode of embodiment of the invention is described hereunder, together with the explanation of the drawings.

[0022] In figures 1 and 2, it can be observed how the cage object of the invention actually has a general configuration in the shape of an "H" formed by two tubular end members (1) vertical and parallel to each other, joined by a tie tube which performs the functions of intermediate bar (3), mounted at about mid-height of the end tubular members.

[0023] In general the diameter of all the tubular members employed is the same, although this factor is not a restrictive matter.

[0024] Moreover, toward the lower end of the vertical tubular members (1), a toeboard (2) is fastened of greater length than the distance which separates the two tubular members (1), for which reason it emerges through both ends.

[0025] On the upper and lower ends of the tubular members (1), some means of fastening are mounted. On the upper ends, the means of fastening consist of a mooring hook (4), formed by a fishplate which is welded to the end of the tubular member on one of its ends and on the upper part, leaving a length of fishplate (4.1) emerging toward the lower part which is separated from the tubular

member (1) by a sufficient distance so that a tubular member of the scaffolding can be accommodated.

[0026] At the bottom the means of fastening consist of a U-shaped mooring piece (5), open at the lower end and welded to the lower end of the vertical tubular members.

[0027] The U-shaped mooring pieces (5) have some perforations (7) facing each other through which a pin (6) is made to pass so that once a tubular member is housed in the interior, and having inserted the pin (6) through the opposing perforations (7), it cannot be removed without first withdrawing the pin (6).

[0028] The installation of the removable protection for intermediate stages of scaffolding, is done by first securing the upper mooring hooks in order to secure thereafter the U-shaped mooring pieces (5), the erection being secured by means of the pins (6) once they have crossed through the opposing perforations or orifices of the U-shaped mooring piece.

[0029] In figure 3, in the simplified representation in perspective of a scaffold, it is observed where the removable protection object of the invention would be mounted, and for what purpose it would serve.

[0030] It can be observed that between the levels (7) of a scaffold an incorporated protection (9) is mounted. This incorporated protection (9) in the scaffold has a toeboard (10), a handrail (11), and an intermediate bar (13). This incorporated protection (9) is sufficient provided one is working on the levels (7). When the incorporation becomes necessary of an intermediate level or stage (8), the incorporated protection (9), in spite of adding an additional bar thereto, cannot perform the protection functions.

[0031] For this reason, a removable protection (12) has been developed, like that which is shown in the right part of the figure, which in addition to having the safety members prescribed, namely, toeboard (2) and intermediate bar (3), is easily removable and is secured by means of the upper (4) and lower (5) fastening means, being specially designed for the intermediate stages or levels of a scaffold.

[0032] That is, the removable protection for intermediate stages of scaffolding, is basically like the protection systems used for the scaffolding spans, unless they only have a toeboard (2) and an intermediate bar (3), since the bar which performs the functions of handrail, would be the bar of the actual structure of the scaffold on which the removable protection is supported.

[0033] It is not considered necessary to extend this description further for any expert in the matter to understand the scope of the invention and the advantages that arise from the same.

[0034] The materials, form, size and arrangement of the members can be modified provided the essential nature of the invention is not altered.

[0035] The terms in which this specification has been expressed must always be taken in the broadest sense and not restrictively.

Claims

1. - Removable protection for intermediate stages of scaffolding, which when secured on a scaffold provides the statutory safety for an intermediate level or stage, **characterized in that** it has an H-shaped general configuration and comprises:
 - Two tubular members (1) vertical and parallel to each other. 5
 - A tie bar which performs the functions of intermediate bar (3) and which joins both tubular members (1), mounted for protection at knee height. 10
 - A toeboard (2) secured almost at the lower end of the tubular members (1), and of greater length than the distance that separates the two vertical tubular members (1). 15
 - Some means of assembly and fastening on a scaffolding and mounted on the upper and lower ends of the vertical tubular members. 20

2. - Removable protection for intermediate staging, according to claim 1, **characterized in that** the assembly and fastening members mounted on the upper ends of the vertical tubular members (1) consist of a mooring hook (4), formed by a fishplate which is welded on one of its ends and on the upper part of the tubular member (1), a length of fishplate (4.1) emerging toward the lower part which length is separated from the tubular member (1) by sufficient distance so that it is possible to accomodate a tubular member of the scaffolding. 25 30

3. - Removable protection for intermediate stages, according to any one of the preceding claims, **characterized in that** the assembly and fastening members mounted on the lower ends of the vertical tubular members (1) consist of some U-shaped mooring pieces (5) which open toward the lower part and which have some opposing perforations (7) through which a pin (6) is made to pass so that once a tubular member has been housed in the interior thereof, and having passed the pin (6) through the opposing perforations (7), it cannot be withdrawn without first removing the pin (6). 35 40 45

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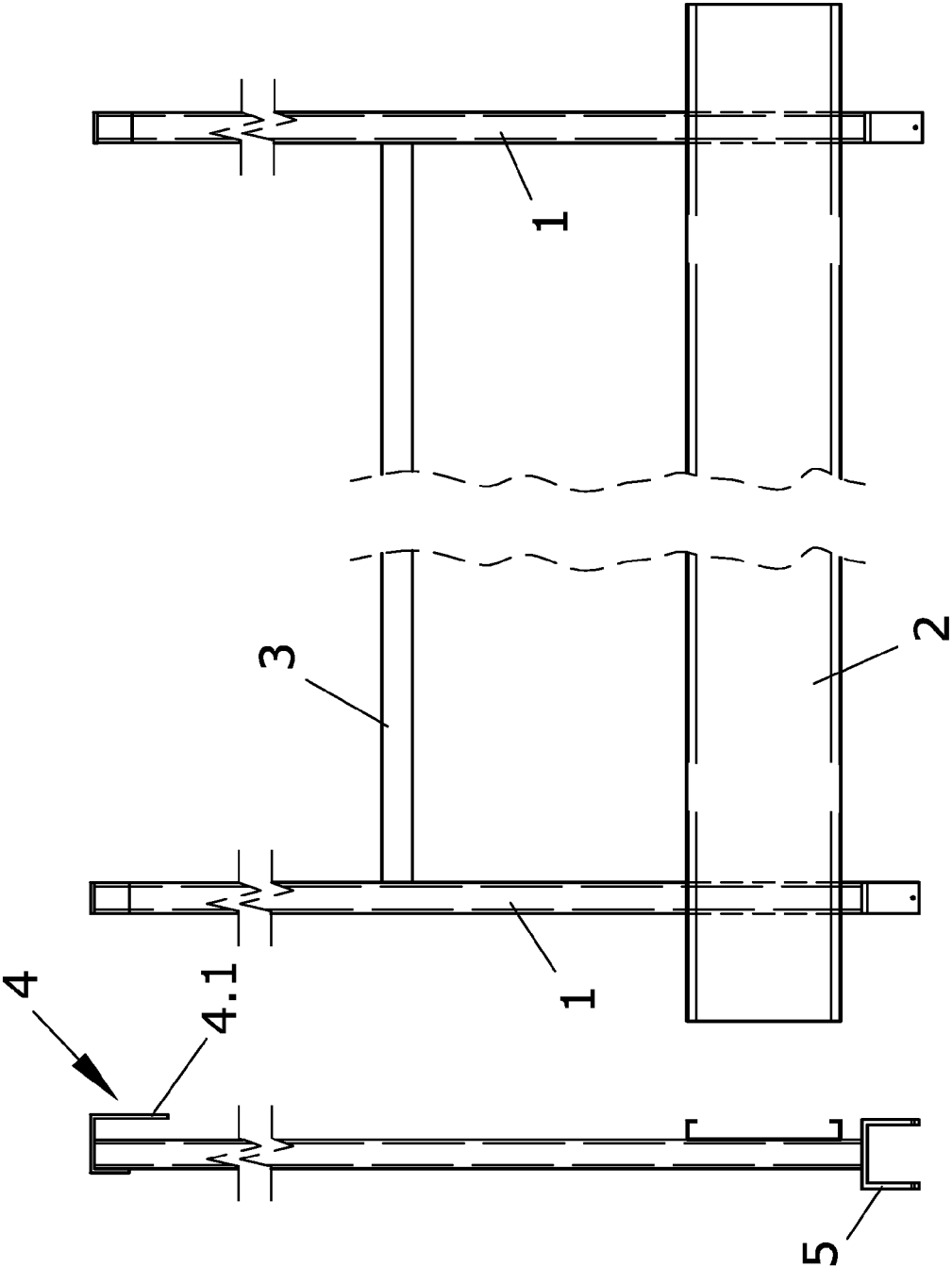


FIG.1

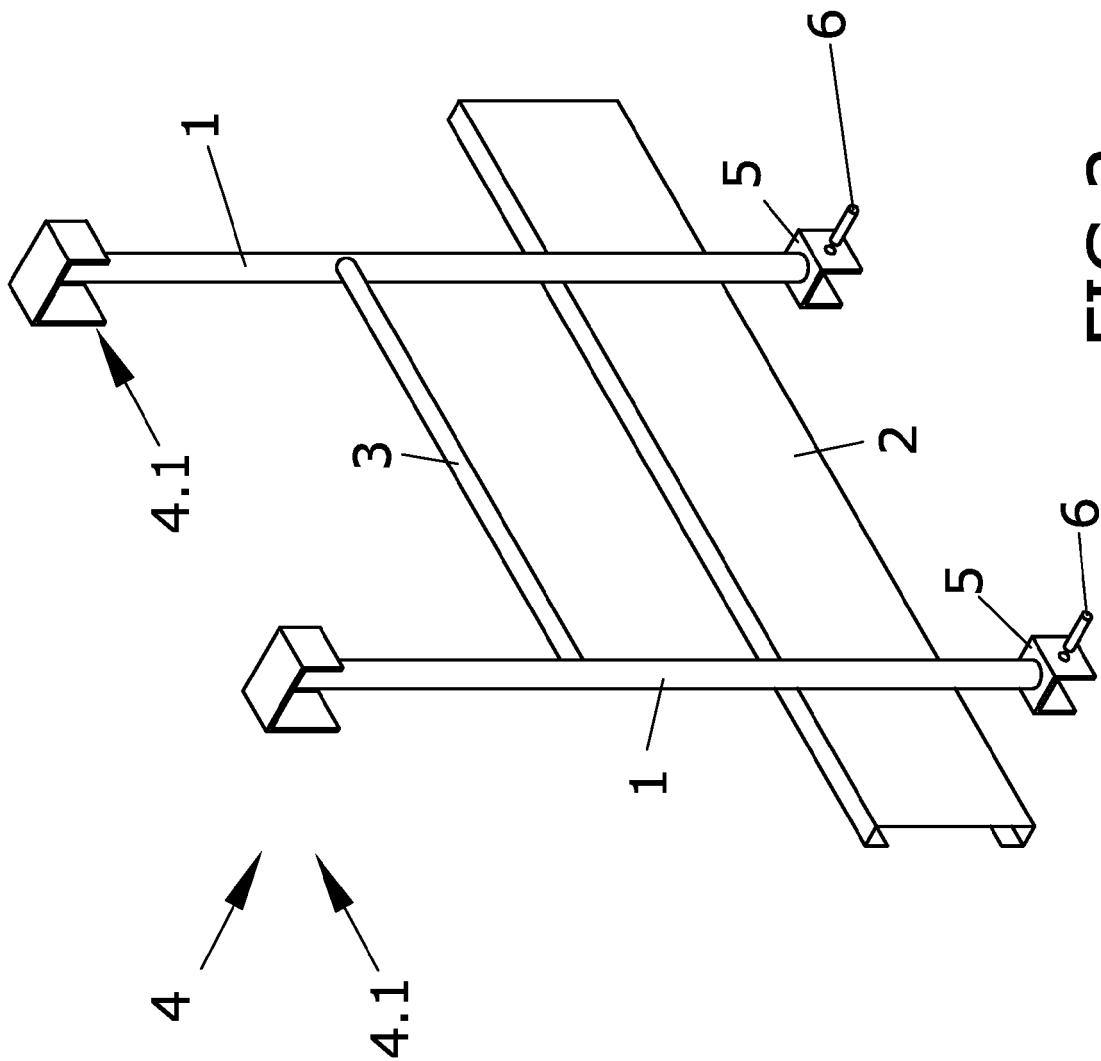
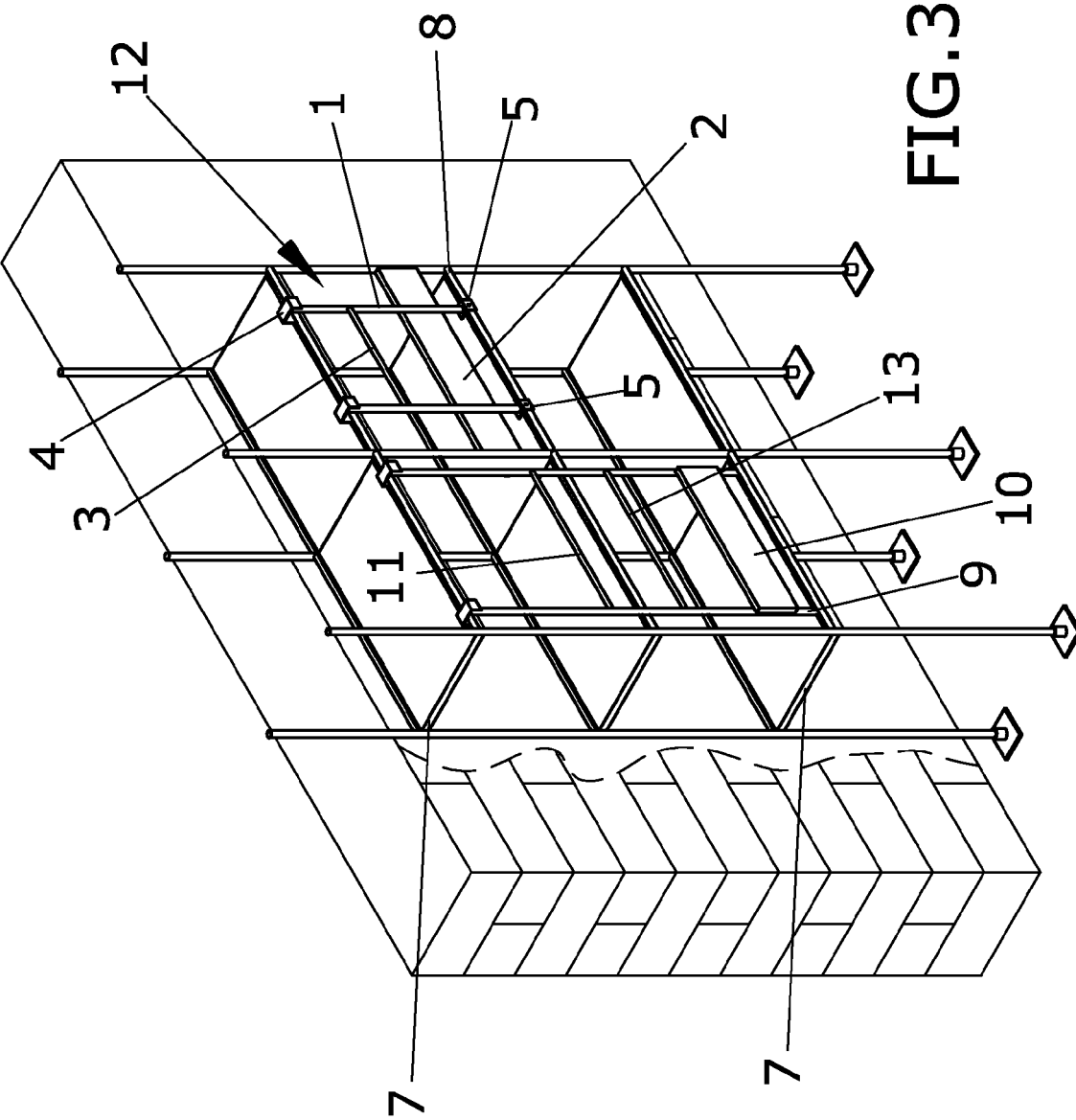


FIG. 2





European Patent
Office

EUROPEAN SEARCH REPORT

Application Number
EP 06 38 1030

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The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 3 January 2007	Examiner Scharl, Willibald
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

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EPO FORM 1503 03.82 (P04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT
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This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
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