



(12) **EUROPEAN PATENT APPLICATION**

(43) Date of publication:

16.06.2004 Bulletin 2004/25

(51) Int Cl.7: **B61H 13/36, B61H 1/00**

(21) Application number: **03022763.1**

(22) Date of filing: **10.10.2003**

(84) Designated Contracting States:

**AT BE BG CH CY CZ DE DK EE ES FI FR GB GR
HU IE IT LI LU MC NL PT RO SE SI SK TR**

Designated Extension States:

AL LT LV MK

(72) Inventors:

• **Emilsson, Fred**
231 75 Trelleborg (SE)

• **Haag, Magnus**
212 32 Malmö (SE)

(30) Priority: **08.04.2003 SE 0301051**

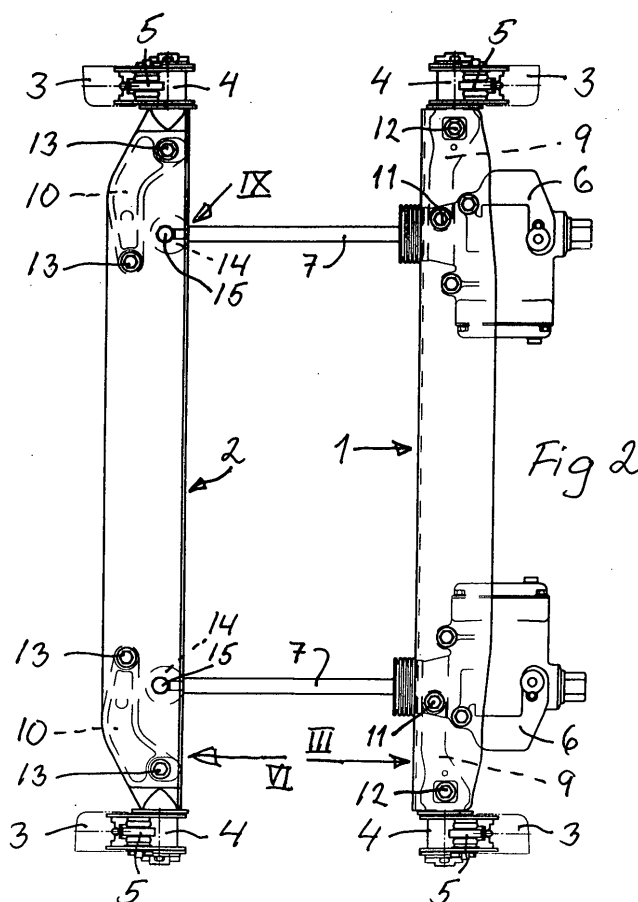
(71) Applicant: **SAB WABCO NORDIC AB**
261 24 LANDSKRONA (SE)

(74) Representative: **Petri, Stellan et al**
Ström & Gulliksson IPC AB,
Box 4188
203 13 Malmö (SE)

(54) **A rail vehicle bogie brake beam**

(57) A brake beam (1, 2) for a rail vehicle bogie brake is built-up of plate profiles (8) and has a pivotable brake block holder (4) at each end. The brake beam (1, 2) has an end piece (9, 10) at each end, to which end

piece the plate profiles (8) are connectable by means of releasable joints, such as screw joints, and which has a cylindrical mounting shaft (9', 10') for the pivotable mounting of the brake block holder (4).



Description

Technical Field

[0001] The present invention relates to a brake beam for a rail vehicle bogie brake, the brake beam being built-up of plate profiles and at each end having a pivotable brake block holder.

Background of the Invention

[0002] A brake beam of the above-mentioned kind is shown in WO 01/36247. Especially Fig 3 therein and the related description discloses that Z-shaped longitudinal beam plate profiles are provided with a welded end construction comprising transverse plates and cylindrical mounting shafts for the brake block holders.

[0003] These brake beams are accordingly constructed in a workshop by several parts in a comparatively complicated manufacturing process including welding. The brake beams then have to be delivered to a waggon manufacturer as bulky complete units. The welded joints could give rise to problems due to fatigue failure. The permanent nature of the joints is a complication at a renovation of the beam or a brake unit contained therein.

The Invention

[0004] The drawbacks and problems with such a brake beam can according to the invention be obviated in that the brake beam at each end has an end piece, to which the plate profiles are connectable by means of releasable joints, such as screw joints, and which has a cylindrical mounting shaft for the pivotable mounting of the brake block holder.

[0005] The use of only plate profiles and end pieces, which are joined by screw joints, means that an advantageous module system is created. Different, preferably laser-cut plate profiles, such as L-profiles, and cast end pieces can be kept in stock in a volume-efficient way ready to be used for building-up a broad variety of brake beams, which are simply mounted by screw-joints. This means that transport may be very efficient and that mounting can be effected at the waggon-builders. A brake beam can then be readily dismantled if needed for renovation for example of a brake unit contained in the beam.

The Drawings

[0006] The invention will be described in further detail below under reference to the accompanying drawings, in which

Fig 1 is a side view of a typical bogie brake, in which the invention may be embodied,

Fig 2 is a top view of the same arrangement,

Fig 3 is a detail view to a larger scale in the direction

of the arrow III in Fig 2,

Fig 4 is a side view (corresponding to Fig 3) of an end piece for use according to the invention in a bogie brake,

Fig 5 is a top view of the end piece of Fig 4,

Fig 6 is a side view to a larger scale in the direction of the arrow VI in Fig 2,

Fig 7 is a side view (corresponding to Fig 6) of another end piece for use according to the invention in a bogie brake,

Fig 8 is a top view of the end piece of Fig 7, and

Fig 9 is a detail view of a portion indicated by an arrow IX in Fig 2.

Detailed Description of Embodiments

[0007] Generally speaking a bogie brake as shown in Figs 1 and 2 is known in the art, for example from WO 01/36247, to which reference is made for further information. A bogie brake is arranged in a rail vehicle bogie for braking cooperation with the treads of its wheels.

[0008] The bogie brake shown in Figs 1 and 2 has two brake beams 1 and 2, transversely suspended between two wheelsets in the bogie and arranged to be pressed apart for braking engagement - by brake blocks 3 provided at the ends of the brake beams - with the wheel treads.

[0009] Each brake block 3, which is worn-out after a number of brake applications and has to be replaced, is releasably attached to a brake block holder 4 with a design not to be described here. Each such brake block holder 4 is provided with a suspension link 5 for its suspension in the bogie.

[0010] The brake beam 1 to the right in Figs 1 and 2 is provided with two conventional brake units 6 and is called a brake unit beam. A push rod 7 of each brake unit 6 is connected to the opposite brake beam or slave beam 2, so that the two brake beams thus are pressed apart at the application by compressed air of the brake units 6.

[0011] The brake unit 6 used in the present instance is a conventional unit, which is widely used especially for block braking. It has a parallelepipedical shape and is well suited to be arranged in a brake beam 1, which has a design to be described below. Besides a cylinder/piston-arrangement it contains a slack adjuster or brake regulator, as is well known in the art.

[0012] Each brake beam 1 and 2 is composed of plate profiles 8, preferably two plate profiles, and end pieces 9 and 10 for connecting the two plate profiles 8 and for pivotally mounting the brake block holders 4 and the suspension links 5. In the present preferred case, the plate profiles 8 are L-profiles, each having - when mounted in a beam - its longer leg generally horizontal and its shorter leg generally vertical. In the brake unit beam 1 the shorter legs of the two L-profiles are directed towards each other, as may for example be seen in Fig 3, whereas in the slave beam 2 the shorter legs are di-

rected from each other, as may for example be seen in Figs 6 and 9. The plate profiles 8 are laser cut into the desired length and shape, for example with regard to holes.

[0013] Alternatively, the plate profiles may be U- or Z-profiles. 5

[0014] The end pieces 9 and 10 are preferably cast or forged of nodular iron. Each end piece is provided with a cylindrical end pin or mounting shaft 9' or 10' for the pivotal mounting of the brake block holder 4 and the suspension link 5. 10

[0015] The first end piece 9 is shown in two views in Figs 4 and 5 and mounted in a brake beam 1 in Fig 3 (in the same view as in Fig 4). It is intended for a brake unit beam 1, in which one or more brake units 6 are mounted (by screw joints) between the plate profiles 8, having their shorter legs directed towards each other. 15

[0016] As shown in Fig 4, the first end piece 9 may be fork-shaped or U-shaped in a side view so as to provide space for brake unit portions between its legs. In the shown case, it is connected to the plate profiles 8 by means of screw joints 11 and 12, of which the former ones are short and only extend through the end piece legs, whereas the latter one extends through a hole through the main body of the end piece. 20 25

[0017] Similarly, the second end piece 10 is shown in two views in Figs 7 and 8 and mounted in a brake beam 2 in Fig 6 (in the same view as in Fig 7). It is intended for a slave beam 2, which does not contain any brake unit and whose plate profiles 8 have their shorter legs directed from each other, as most clearly appears in Fig 9. 30

[0018] This second end piece 10 is comparatively thin, and the plate profiles 8 are connected thereto by through screw joints 13. As shown in Fig 8, the end piece 10 may be curved so as to provide possibility to arrange laser-cut holes 14 in the plate profiles 8 for a pivotable connection of the push rod 7 from the brake unit 6, as more clearly appears from Fig 9. 35

[0019] From different viewpoints it is advantageous to arrange the brake units 6 as close to the brake beam ends as possible, which makes it preferred to design the end pieces 9 and 10 in the shown and described way. 40

[0020] The end pieces 9 and 10 as shown and described for use in conjunction with brake beams 1 and 2 may likewise be used for a variety of other bogie brake arrangements or clasp brake arrangements, which makes the design extremely versatile. 45

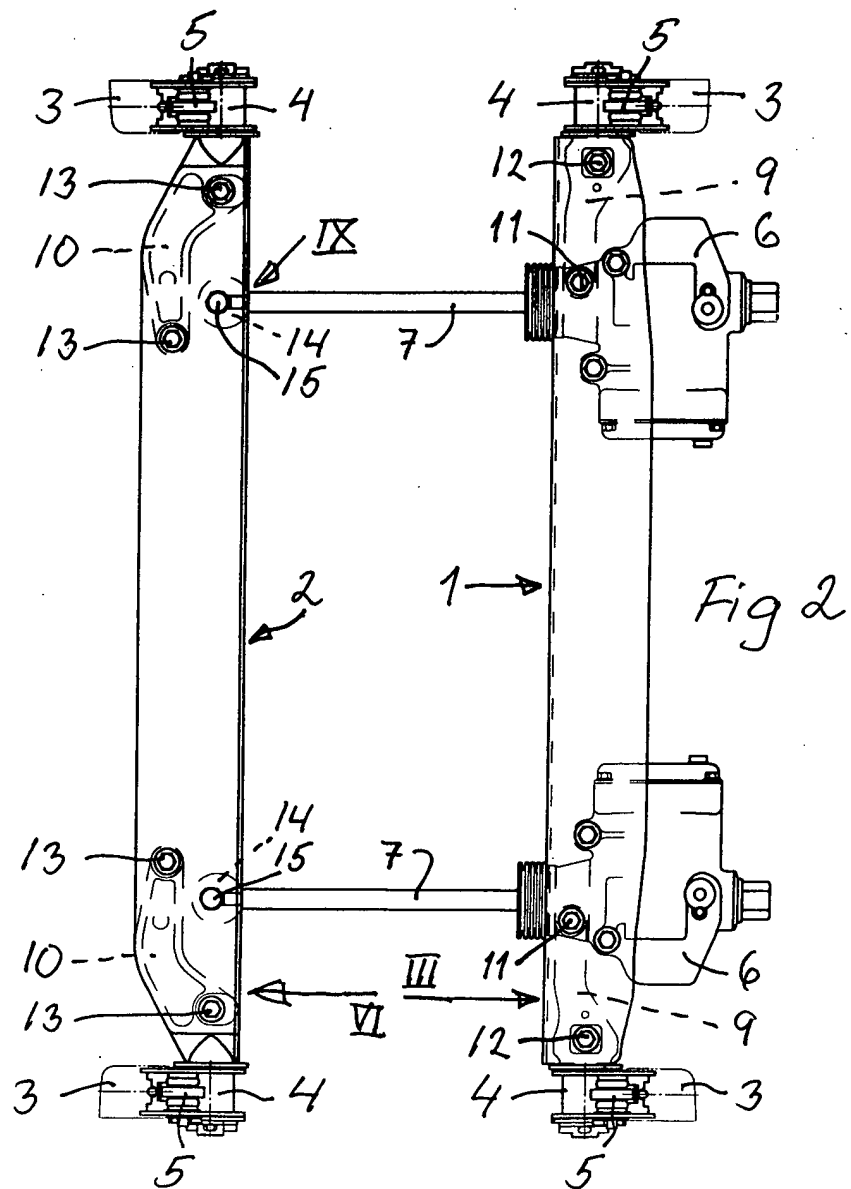
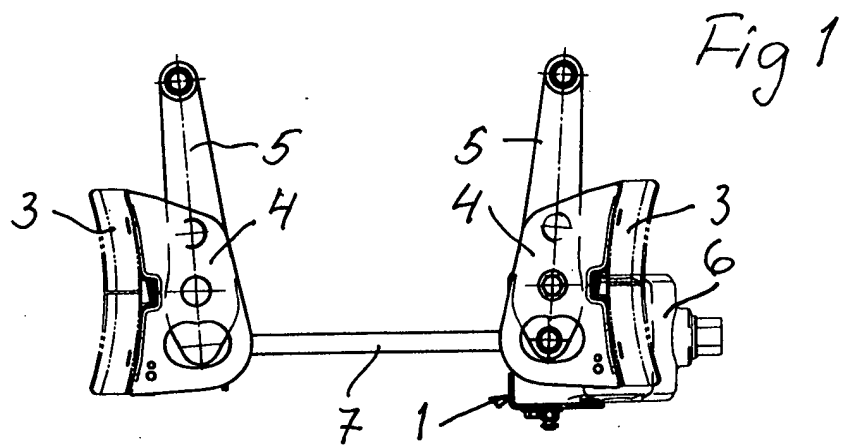
[0021] A pivotable connection between the push rod 7 and the slave beam 2 is shown in Fig 9. A push rod head 14 is threadedly connected to the push rod 7. A screw joint 15 with a distance sleeve 16 with somewhat greater length than the thickness of the push rod head 14 extends through a hole in the push rod head. The distance sleeve 16 has a length corresponding to the thickness of the end piece 10 and a diameter corresponding to that of the hole in the push rod head 14. 50 55

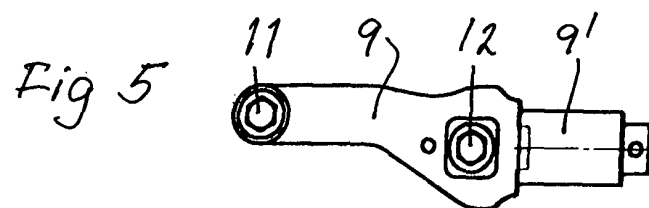
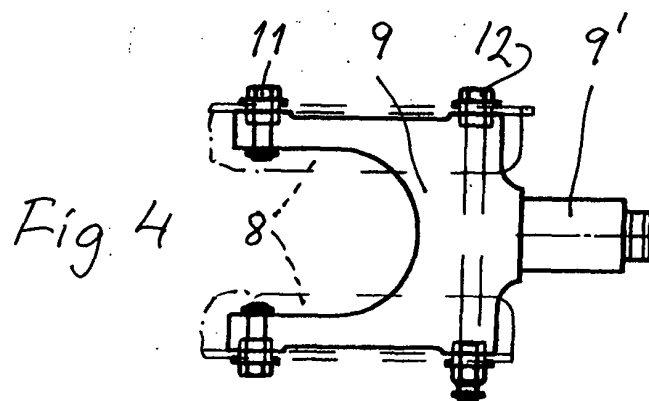
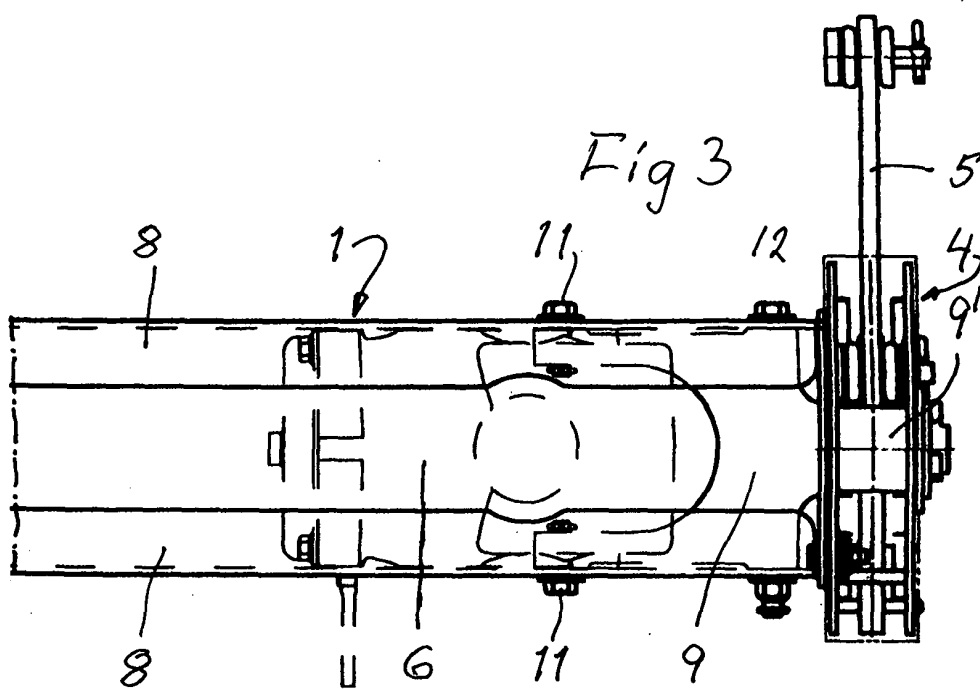
[0022] The push rod 7 will hereby be pivotably at-

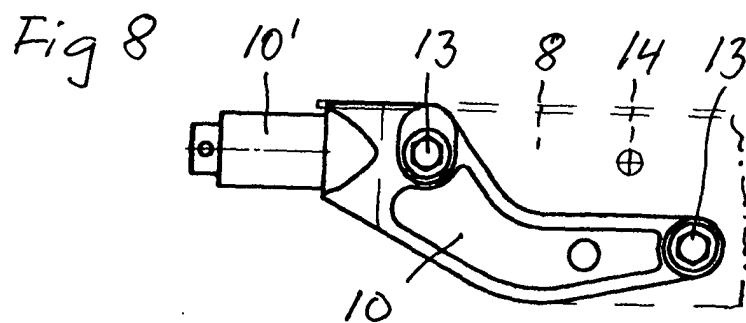
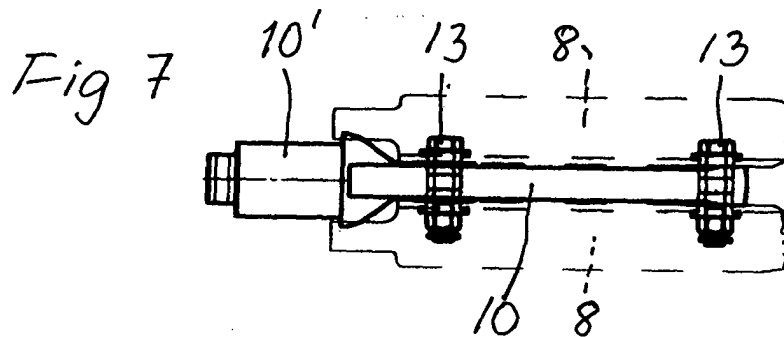
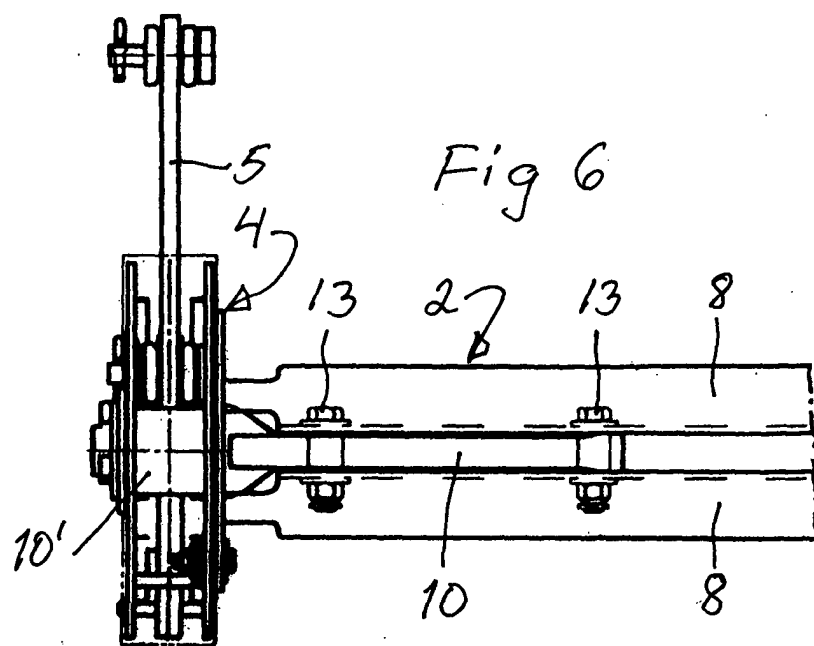
tached to the slave beam 2.

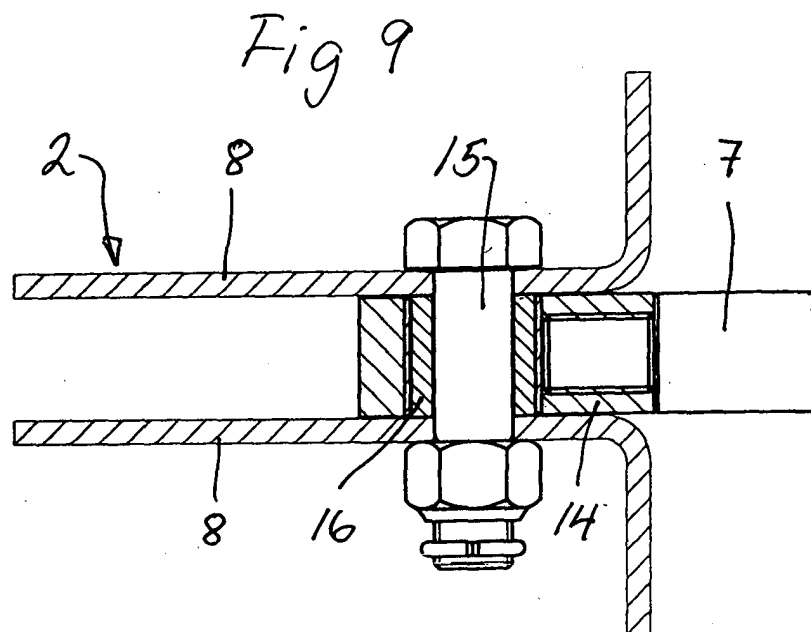
Claims

1. A brake beam (1, 2) for a rail vehicle bogie brake, the brake beam being built-up of plate profiles (8) and at each end having a pivotable brake block holder (4), **characterized in that** the brake beam (1, 2) at each end has an end piece (9, 10), to which the plate profiles (8) are connectable by means of releasable joints, such as screw joints, and which has a cylindrical mounting shaft (9', 10') for the pivotable mounting of the brake block holder (4).
2. A brake beam according to claim 1, wherein the end pieces (9, 10) are cast or forged of nodular iron.
3. A brake beam according to claim 1, wherein the plate profiles (8) are L-profiles.
4. A brake beam according to claim 3, wherein brake units (6) are arranged between plate profiles (8) with their shorter legs directed towards each other so as to form a brake unit beam and wherein the thickness of the end pieces (9) corresponds to the thickness of the brake units (6).
5. A brake beam according to claim 4, wherein the end pieces (9) are fork-shaped or U-shaped in a side view so as to provide space between its formed legs.
6. A brake beam according to claim 3, wherein the beam is composed of two plate profiles (8) with their shorter legs directed from each other and end pieces (10) having a thickness for providing the necessary strength to the beam.
7. A brake beam according to claims 4 and 6, wherein push rods (7) from the brake units (6) are pivotably connected between the two plate profiles (8).











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Application Number
EP 03 02 2763

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			TECHNICAL FIELDS SEARCHED (Int.Cl.7)
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The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 12 November 2003	Examiner Schroeder, R
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			

EPC FORM 1503 03 B2 (P04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT
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