



(11) **EP 2 371 758 A1**

(12) **EUROPEAN PATENT APPLICATION**

(43) Date of publication:
05.10.2011 Bulletin 2011/40

(51) Int Cl.:
B67B 7/04 (2006.01)

(21) Application number: **11155690.8**

(22) Date of filing: **23.02.2011**

(84) Designated Contracting States:
**AL AT BE BG CH CY CZ DE DK EE ES FI FR GB
GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO
PL PT RO RS SE SI SK SM TR**
Designated Extension States:
BA ME

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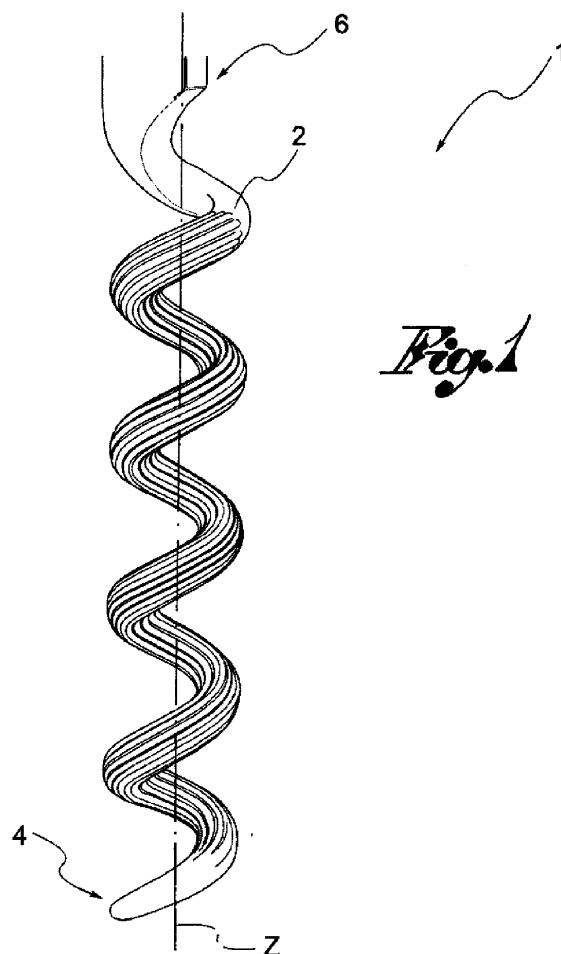
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(30) Priority: **30.03.2010 IT BS20100062**

(54) **Perforating tip for a corkscrew**

(57) A corkscrew is provided with a perforating tip (1), comprising a wire (2) wound in coils, provided on the surface with projecting prominences (10) which follow the winding of the wire, to improve screwing and unscrewing of the tip, especially in the case of synthetic corks.



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Description

[0001] The present invention relates to a corkscrew with perforating tip.

[0002] It is known how manual corkscrews are made from a tip, generically helical in shape, and a grip or handle, to lend rotary movement to the tip.

[0003] By means of a thrust and rotation of the tip, this penetrates the cork, inserted in the mouth of the bottle. When the tip has penetrated a sufficient length of the cork, the corkscrew is pulled, causing extraction of the cork, which remains screwed onto the tip.

[0004] Usually the cork is unscrewed by holding the tip still with one hand and rotating the cork with the other, or vice versa.

[0005] It is known how alongside traditional corks made from cork, corks in synthetic material are widely used today, in general plastic polymers or in silicon.

[0006] The intrinsic properties of the synthetic material make screwing of the tip particularly difficult.

[0007] In addition, the synthetic material is usually smoother and less absorbent than the cork, so that even unscrewing a synthetic cork from the corkscrew is sometimes difficult, in that the cork is difficult to grip.

[0008] The purpose of the present invention is to make a corkscrew with a tip which overcomes the drawbacks spoken of.

[0009] Such purpose is achieved by a corkscrew with perforating tip according to claim 1.

[0010] The characteristics and advantages of the corkscrew according to the present invention will be evident from the description given below, made by way of a non-limiting example, according to the appended drawings, wherein:

[0011] - figure 1 shows a perforating tip of a corkscrew according to one embodiment of the present invention;

[0012] - figure 2 shows a perforating tip of a corkscrew according to a further embodiment of the present invention;

[0013] - figure 3 shows a perforating tip of a corkscrew according to yet a further embodiment of the present invention;

[0014] - figures 4 to 6 show cross-section views of the tips in the previous figures;

[0015] figure 7 shows a cross-section view of a perforating tip according to a fourth embodiment.

[0016] With reference to the appended drawings, a corkscrew comprises a grip and a perforating tip 1, connected to the grip to lend translatory and rotatory movement.

[0017] The tip 1 extends mainly along an advancement axis Z and is composed of a wire 2 wound around said axis Z, in a helical pattern.

[0018] Preferably, the helical pattern of the tip has a constant pitch. According to embodiment variations, the pitch is variable along the advancement axis Z.

[0019] The wire 2 extends from a sharpened front end 4 to a rear end 6 opposite the front end along the Z axis,

usually flattened, to facilitate the connection of the tip 1 to the body of the corkscrew (not shown).

[0020] The wire 2 comprises a core 8 and at least one helical prominence 10, projecting from the surface of the core 8.

[0021] In other words, performing a transversal section of the wire 2, obtained on a plane perpendicular to the advancement axis Z, the section, for example circular, of the core 8 and the sections of the prominences 10 projecting from the surface of the core are evident.

[0022] According to a particularly preferred embodiment, the free end 10' of the prominence 10 is rounded, that is has no sharp edges.

[0023] Consequently, according to this variation, the prominence need not have a pointed or sharp free end, since it has been discovered that the force needed to cut the material the cork is made of makes its insertion/unscrewing from the perforating tip less easy.

[0024] Preferably, the wire 2 comprises a plurality of prominences 10, having the same helical pattern as the wire, that is with an identical pitch, completely surrounding the core 8, angularly equidistant (figures 1, 4 and 7).

[0025] Preferably, moreover, the prominences are continuous along the axial unwinding of the tip 1, that is continuous from the front end 4 to the rear end 6 (figures 1 and 2).

[0026] According to a further embodiment, the prominences 10 occupy only an angular portion of the outer surface of the core 8, e.g. only half of the surface, such as that which defines the outer surface of the helical surface in relation to the centre line (figures 2 and 5, 3 and 6).

[0027] According to yet a further embodiment, the prominences 10 are interrupted in their axial unwinding along the advancement axis Z (figure 3).

[0028] Advantageously, adjacent prominences 10 identify between them at least one groove 12 of sufficient depth to at least partially avoid contact of the core 8 with the cork.

[0029] In other words, this variation foresees that the prominences 10 are sufficiently high, or that the relative groove 12 is deep enough, to limit the contact of the cork with the core.

[0030] In fact, by reducing the contact surface between the perforating tip and the cork, less friction is produced between them, so that the operations of inserting the tip in the cork and subsequently unscrewing it are drastically facilitated even for corks in synthetic material.

[0031] According to the embodiment shown in figure 7, the connection surface 14 between adjacent prominences 10 is substantially concave.

[0032] Preferably, the wire 2 is one-pieced, for example in a metallic material, such as steel, preferably covered in a non-stick polymer, such as PTFE.

[0033] To manufacture the tip 1 described above, a straight wire is placed in rotation along a longitudinal rotation axis, for example resting on a support cylinder.

[0034] A shaping roller is placed alongside the straight wire, parallel to it, having one or more longitudinal ribs,

continuous or interrupted depending on the desired tip embodiment.

[0035] The shaping roller plastically bends the straight wire, so as to form the longitudinal prominences on it.

[0036] Consequently, during such bending, the wire material is preferably plastically re-distributed to form the prominences and corresponding grooves, as for example shown in the embodiment illustrated in figure 7 in which the dotted perimeter 16 represents the transversal section of the wire before said bending and in which the section shown by the solid line is that of the finished perforating tip.

[0037] The wire provided with longitudinal prominences is then cut according to the length of the tip to be obtained, the sharpened end is formed on one side and the flattened end on the other, and lastly wound into a spiral shape, forming the perforating tip.

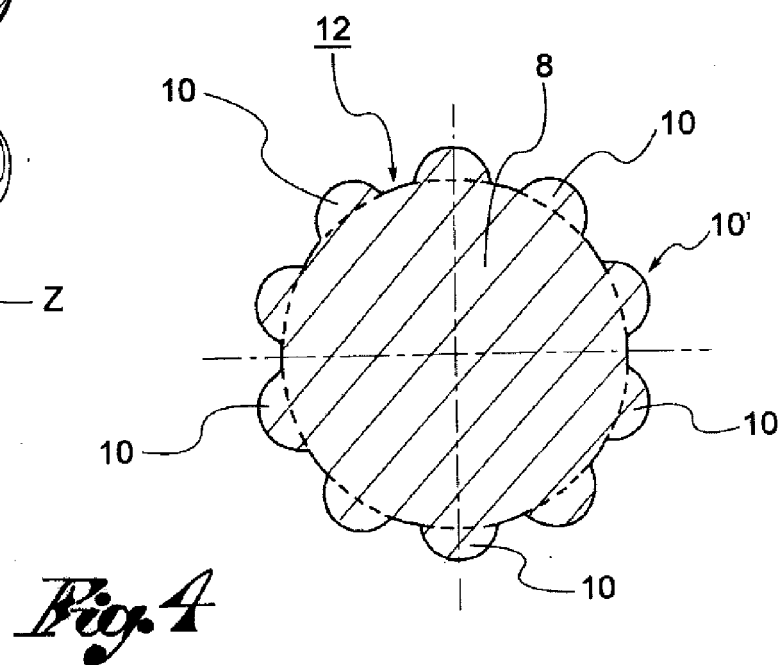
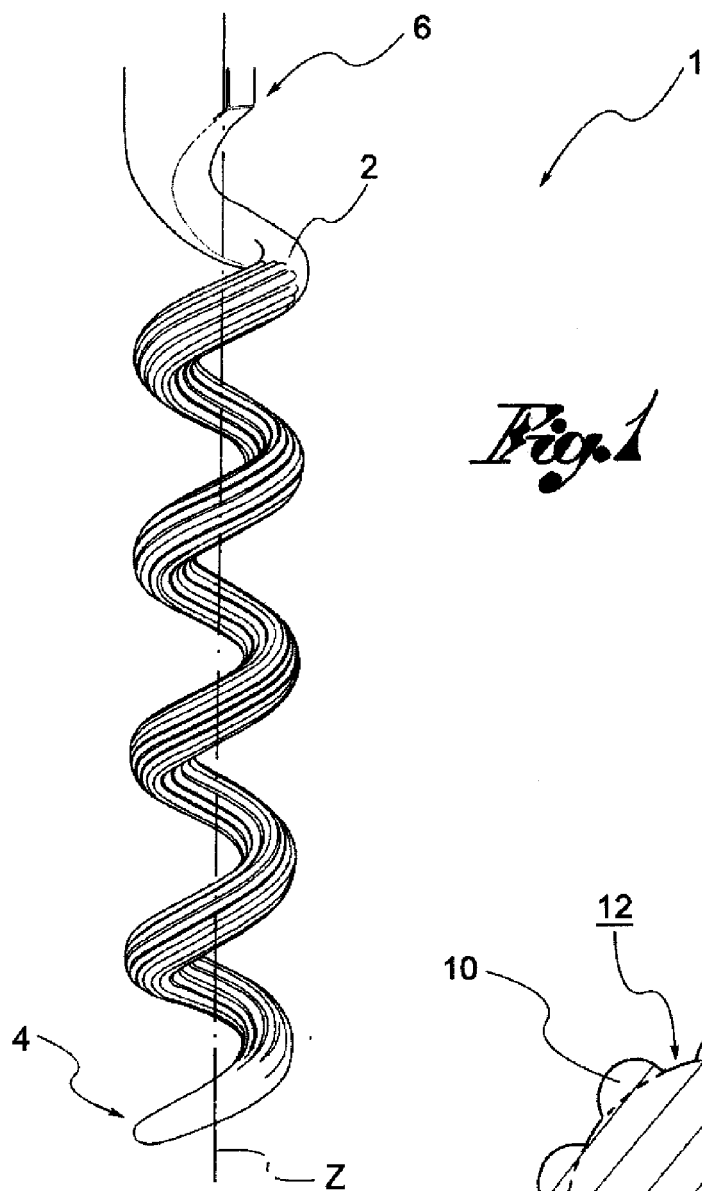
[0038] Innovatively, the perforating tip and corkscrew according to the present invention overcomes the drawbacks described. In fact, surprisingly, it has been found that screwing and unscrewing of the cork from the tip, even when the cork is in synthetic material, is particularly easy thanks to the presence of the aforementioned helical prominences.

[0039] It is clear that a person skilled in the art may make modifications to the perforating tip and corkscrew according to the present invention, all contained within the scope of protection as defined by the appended claims.

Claims

1. Perforating tip (1) for a corkscrew, comprising a wire (2) wound in coils around an advancement axis (Z) and comprising an inner core (8), said wire being provided on the surface with at least one prominence (10) projecting from the surface of the core (8) which follows the winding of the wire.
2. Tip according to claim 1, wherein the wire is wound in a helical pattern and the prominence (10) has a helical pattern.
3. Tip according to claim 1 or 2, wherein the prominence (10) is continuous along the advancement axis (Z).
4. Tip according to any of the previous claims, wherein the free end (10') of the prominence (10) is rounded.
5. Tip according to any of the previous claims, comprising a plurality of prominences (10) angularly equidistant around the core (8).
6. Tip according to claim 5, wherein the prominences completely surround the transversal section of the core (8).

7. Tip according to any of the claims 5 or 6, wherein adjacent prominences (10) identify between them at least one groove (12) of sufficient depth to at least partially avoid contact of the core (8) with a cork.
8. Tip according to any of the claims from 5 to 7, wherein the connection surface (14) between adjacent prominences (10) is substantially concave.
9. Tip according to any of the claims from 1 to 4, wherein the prominences project from only one half of the transversal section of the core.
10. Tip according to any of the previous claims, wherein the wire is made in a single piece of steel.
11. Tip according to any of the previous claims, wherein the wire is covered with a non-stick polymer, such as PTFE.
12. Tip according to any of the previous claims, wherein the tip has a sharpened front end (4) and a flattened rear end (6).
13. Corkscrew comprising a grip section and a perforating tip (1), according to any of the previous claims, connected to the grip section.
14. Method of making a perforating tip for a corkscrew comprising the steps of:
 - placing a straight wire in rotation along a longitudinal rotation axis;
 - placing alongside the straight wire a shaping roller provided with at least one longitudinal rib;
 - permanently bending the straight wire, making longitudinal prominences on it;
 - wrapping the wire in coils making the perforating tip.
15. Method according to claim 14, wherein the bending step comprises a plastic bending of the straight wire.



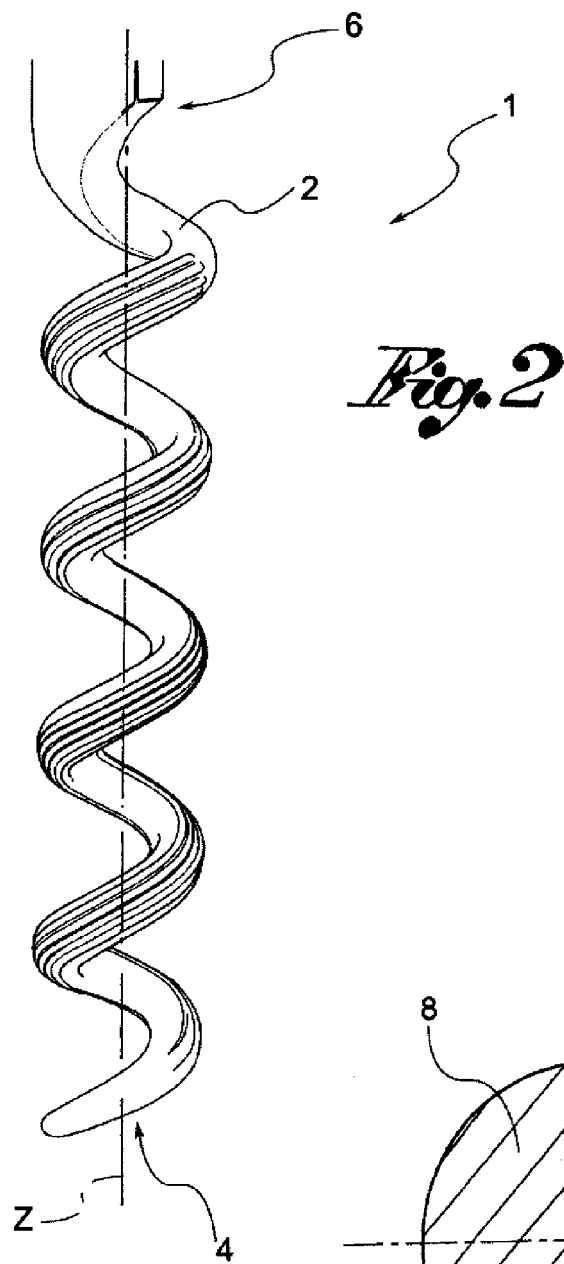
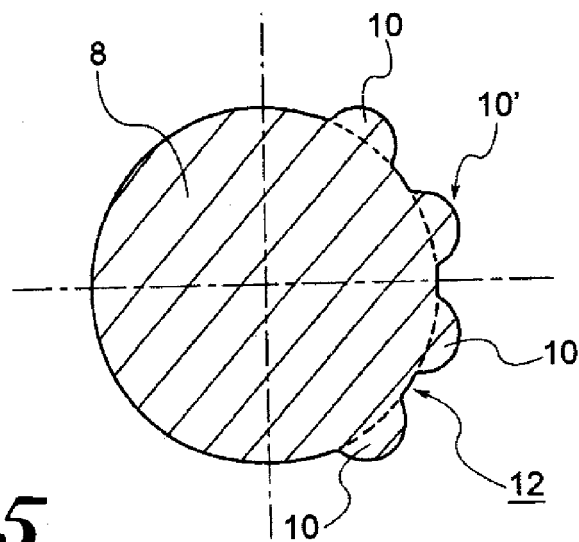
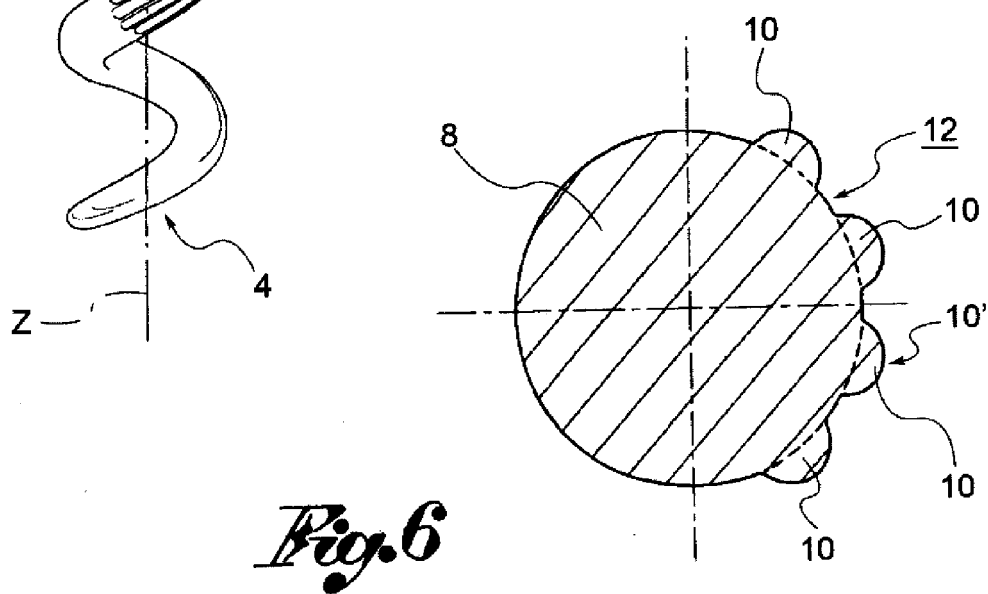
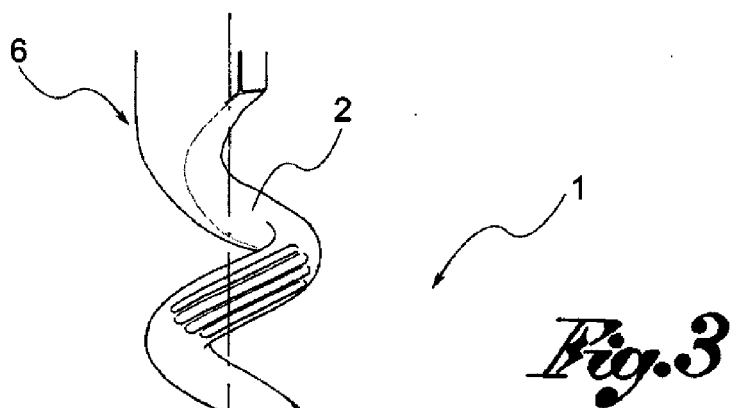


Fig. 2

Fig. 5





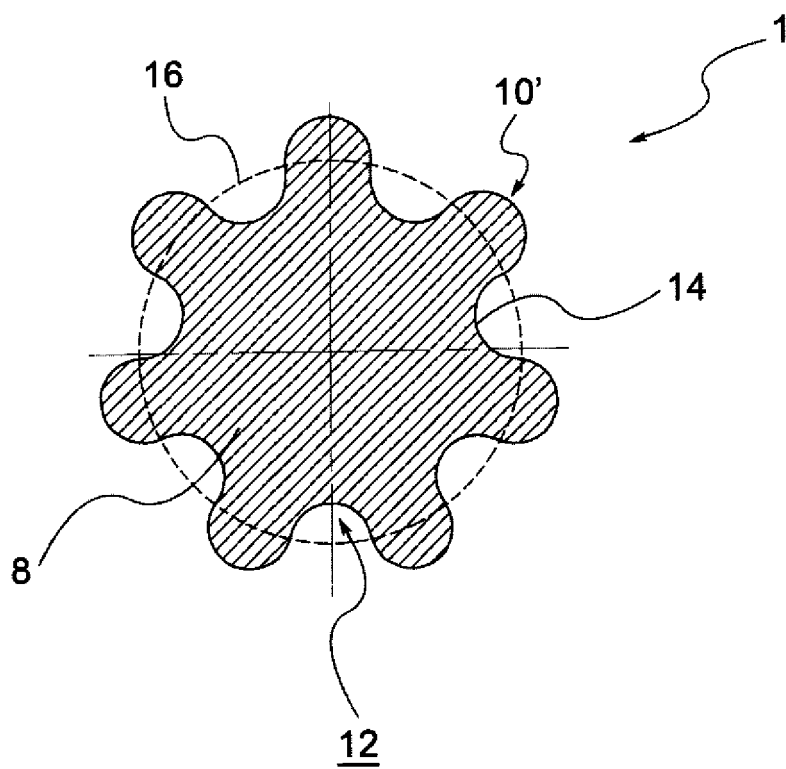


Fig. 7



EUROPEAN SEARCH REPORT

Application Number
EP 11 15 5690

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	FR 1 201 854 A (AESCHLIMANN MAX) 6 January 1960 (1960-01-06)	1-3, 5-10,12, 13	INV. B67B7/04
Y	* page 2; figures 1-10 *	11	
A	-----	14	
X	CH 369 377 A (AESCHLIMANN MAX [CH]) 15 May 1963 (1963-05-15)	1-3,5,6, 10,12,13	
A	* figures 1,2 *	14	
Y	----- US 4 429 444 A (ALLEN HERBERT [US]) 7 February 1984 (1984-02-07)	11	
A	* abstract; figures 1-8 *	14	

			TECHNICAL FIELDS SEARCHED (IPC)
			B67B
The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 8 July 2011	Examiner Wartenhorst, Frank
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
ON EUROPEAN PATENT APPLICATION NO.**

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This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
The members are as contained in the European Patent Office EDP file on
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08-07-2011

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