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(54) **A device and a method for launching a target pigeon**

(57) The present invention relates to a device (1) for launching a target pigeon, said target pigeon being of a type comprising propeller vanes, said device (1) being adapted for holding said target pigeon during launch. One aspect of the invention relates to a device (1) comprising a substantially central placed beak (2), said beak being adapted for interaction with a target pigeon, and where said beak is arranged in at least one bearing (7,3) and movable between positions for engaging and not engaging the target pigeon, respectively. Arranging the beak (2) in at least one bearing (7,3) and movable between positions for engaging and not engaging the target pigeon, respectively, provides a solution, where a minimum of space is required. However, still providing a beak (2) having a not engaging position, whereby the target pigeons may be loaded straight onto the device (1) without e.g. tipping said target pigeons.

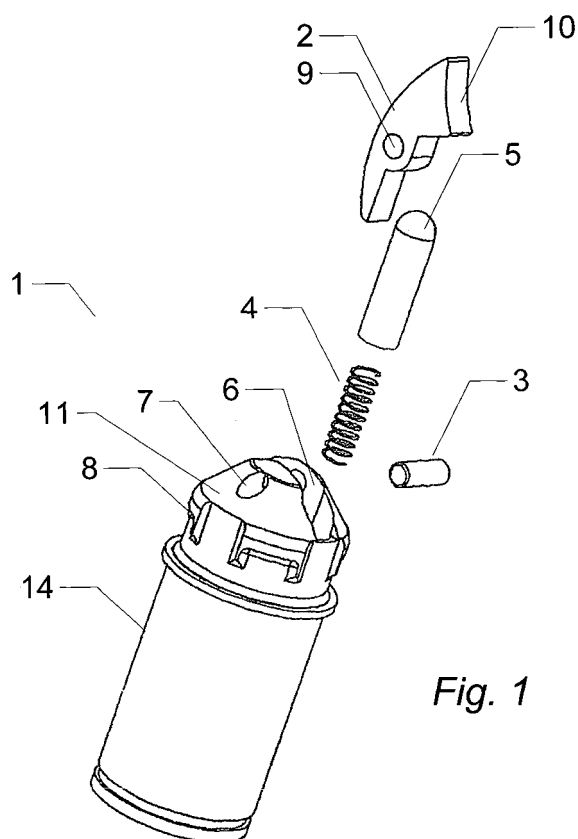


Fig. 1

Description

[0001] The present invention relates to a device for launching a target pigeon, said target pigeon being of a type comprising propeller vanes, said device being adapted for holding said target pigeon during launch. The invention further relates to a method of launching target pigeons.

[0002] In US 4,077,384, which is hereby incorporated for reference, is displayed an apparatus for launching target pigeons, where a beak is used for making the trajectory less predictable in a random manner. The tip of the beak extends outwards to one side, whereby the target pigeons may not be loaded straight onto the launching head, but must be tipped, which is an awkward operation on a launcher with automatic loading.

[0003] In US 4,205,651 is displayed an apparatus for launching target pigeons of a type, which consists of a propeller part and a cup-shaped witness part as known from US 4,218,061, which is hereby incorporated for reference. The propeller part does not have a central web portion as known from US 4,077,384, but has a ring-shaped central part. The cup-shaped witness part is attached on the top side of the propeller part on a diameter larger than the ring-shaped central part. Such a target pigeon provides free space and the possibility of making a large launcher head. This provides sufficient space in the launcher head for a radially retractable beak and means for controlling it. When target pigeons are used, which do not allow a large launcher head, the suggested solution can however not be used. Some types of target pigeons also require that the launcher head extends through the witness part, such as in WO 02/027261 A1, whereby very little surface area would be left to shoot at, if a large launcher head is used.

[0004] One aspect of the invention relates to a device comprising a substantially central placed beak, said beak being adapted for interaction with a target pigeon, and where said beak is arranged in at least one bearing and movable between positions for engaging and not engaging the target pigeon, respectively. Such a device may be used with any type of target pigeon, including e.g. the types depicted in US 4,077,384 and WO 02/027261 A1. Arranging the beak in at least one bearing and movable between positions for engaging and not engaging the target pigeon, respectively, provides a solution where a minimum of space is required. However, still providing a beak having a not engaging position, whereby the target pigeons may be loaded straight onto the device without e.g. tipping said target pigeons.

[0005] In one preferred embodiment the bearing may comprise an axle, said axle being positioned through said beak and arranged in at least one bore in said device. Such an arrangement provides a reliable construction, which may be manufactured at a low cost.

[0006] In another preferred embodiment the beak may be arranged in a way such that it may be replaced or exchanged with a beak with a different design, said

design providing a higher or lesser degree of interaction with said target pigeon. The effect of the beak on the flight path of the target pigeon may hereby be adjusted or changed frequently to further add randomness.

[0007] In a further preferred embodiment the beak may be spring-loaded towards a position not engaging the target pigeon. The beak may hereby without further activation move to the not engaging position, which is the loading position. Energy is hence not needed during loading.

[0008] In a still further preferred embodiment the beak may be arranged with a centre of mass eccentric to said bearing in a way such that said beak may move towards a position for engaging said target pigeon when rotated. By such a design it is obtained that energy does not have to be otherwise supplied to the beak during rotation, but that the rotation can provide centrifugal energy when the beak is arranged eccentric to the bearing.

[0009] In one alternative embodiment the device may comprise at least one pin arranged inside said device, said pin being at least adapted for moving said beak into a position for engaging said target pigeon. Activating and un-activating the beak with a pin may provide a more safe operation since e.g. the position of the pin may be registered with one or more sensors providing signals regarding such a position.

[0010] In another alternative embodiment the pin may be activated by means comprising an electromagnet or a camshaft. Such means may provide sufficient force for the operation of the pin and in a precise and reliable manner.

[0011] In a further preferred embodiment the device may comprise a toothing adapted for application of a rotational energy to said target pigeon. By such a design the target pigeon may be loaded in many positions of the device according to the number of teeth, or the positioning may be completely avoided in case the toothing is adapted to guide the target pigeon or to turn the device relative to the target pigeon during the loading operation.

[0012] Another aspect of the invention relates to a method of launching a target pigeon, said target pigeon being of a type comprising propeller vanes, where said target pigeon is launched by rotating a device, said device being adapted for holding said target pigeon during launch, and where said device comprises a substantially central placed beak, said beak being adapted for interaction with said target pigeon, and where said beak is arranged in a bearing and movable between two positions for engaging and not engaging the target pigeon, respectively, and where said method comprises the steps of:

- moving the beak into a not engaging position
- loading a target pigeon onto said device,
- moving the beak into a position for engaging the target pigeon, and
- launching the target pigeon.

[0013] By such a method any type of target pigeon may be loaded straight onto the device and launched in a manner, where the launch is influenced by the beak.

[0014] The method may preferably be employed where a target pigeon is automatically loaded from at least one magazine. The automatic loading facilitates ensures that a sufficient number of target pigeons in a predetermined series may be launched without interruption for reloading.

[0015] In the following the invention is described with reference to the drawings, which display examples of embodiments of the invention.

Fig. 1 shows a device for launching target pigeons seen in an exploded view

Fig. 2 shows an elevated sectional view of a device

Fig. 3 shows an elevated view of parts of a device.

[0016] Fig. 1 displays a device 1 comprising a cylindrical member 14, which is connected to not displayed means for application of rotational energy to a target pigeon. The member 14 is provided with a conical top 11 with a recess 6. The member 14 is provided with a toothing 8 adapted for interaction with a target pigeon and to apply energy for launching said target pigeon. A bore 7 is applied through the conical top 11 on both sides of the recess 6. The device further comprises a beak 2 with a bore 9 and a deflecting side 10. The deflecting side 10 is adapted for interaction with a target pigeon, e.g. for making its flight path more unpredictable. The device further comprises an axle 3 adapted to provide a bearing for the beak 2. The device also comprises a pin 5 and a spring 4.

[0017] Fig. 2 displays a device 1 comprising a cylindrical member 14 with a bore 12 for a spring 4 and a pin 5. The bore 12 guides the spring and the pin. In a recess 6 a beak 2 is mounted comprising a bore 9, said bore being adapted to receive an undisplayed axle to provide a bearing for said beak 2. The pin 5 is spring-loaded against an underside 13 on the beak 2 to lift the end of said beak. In that situation, when the beak 2 is lifted, no part of the beak is extending to a diameter outside the top of the member 14. An undisplayed target pigeon may hereby be loaded straight onto the device 1 without touching the beak 2. This is a not engaging position of the beak 2. It may be seen from Fig. 2 that the beak is unsymmetrical and has a larger mass on the side of the bore 9, which is in contact with the pin 5, and which comprises a deflecting side 10. When the device is rotated to several thousand rpm, the underside 13 of the beak 2 will move downwards and suppress the spring-loaded pin 5, whereby the beak enters a position for engaging a not displayed target pigeon, preferably by an inner rim of a circular opening in said target pigeon. In the engaging position, the deflecting side 10 is extending to a diameter, where said side may interact with a target pi-

geon.

[0018] Fig. 3 displays a device 1 with a beak 2 arranged in a recess 6 in a conical top 11. The beak 2 is arranged in a bearing provided by an axle 3 through a bore 7 extending through the beak 2. The device 1 may comprise a toothing 8, but other ways of providing a connection to a target pigeon are well known in the art.

[0019] On Fig. 2 and 3 a spring-loaded ring 15 is displayed adapted to keep a target pigeon in a fixed position. The device 1 is adapted for launching an undisplayed target pigeon, said target pigeon being of a type comprising propeller vanes, said device 1 being adapted for holding said target pigeon during launch, where said device comprises a substantially central placed beak 2, said beak 2 being adapted for interaction with said target pigeon, and where said beak is arranged in at least one bearing and movable between positions for engaging and not engaging the target pigeon, respectively. The launching of a target pigeon may comprise moving the beak 2 into a not engaging position, where a target pigeon is loaded onto said device 1, moving the beak 2 into a position for engaging the target pigeon, and launching the target pigeon by rotating the device at high speed and releasing the target pigeon.

[0020] It is to be understood that the invention as disclosed in the description and in the figures may be modified and changed and still be within the scope of the invention as claimed hereinafter.

Claims

1. A device for launching a target pigeon, said target pigeon being of a type comprising propeller vanes, said device being adapted for holding said target pigeon during launch, where said device comprises a substantially central placed beak, said beak being adapted for interaction with said target pigeon, and where said beak is arranged in at least one bearing and movable between positions for engaging and not engaging the target pigeon, respectively.
2. A device according to claim 1, where said bearing comprises an axle, said axle being positioned through said beak and arranged in at least one bore in said device.
3. A device according to claim 1 or 2, where said beak is arranged in a way such that it may be replaced or exchanged with a beak with a different design, said design providing a higher or lesser degree of interaction with said target pigeon.
4. A device according to one or more of claims 1-3, where said beak is spring-loaded towards a position not engaging the target pigeon.
5. A device according to one or more of claims 1-4,

where said beak is arranged with a centre of mass eccentric to said bearing in a way such that said beak may move towards a position for engaging said target pigeon when rotated.

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6. A device according to one or more of claims 1-4, where said device comprises at least one pin arranged inside said device, said pin being at least adapted for moving said beak into a position for engaging said target pigeon. 10
7. A device according to claim 6, where said pin is activated by means comprising an electromagnet or a camshaft. 15
8. A device according to one or more of claims 1-7, where said device comprises a tothing adapted for application of a rotational energy to said target pigeon. 20
9. A method of launching a target pigeon, said target pigeon being of a type comprising propeller vanes, where said target pigeon is launched by rotating a device, said device being adapted for holding said target pigeon during launch, and where said device 25 comprises a substantially central placed beak, said beak being adapted for interaction with said target pigeon, and where said beak is arranged in a bearing and movable between two positions for engaging and not engaging the target pigeon, respectively, and where said method comprises the steps of: 30
 - moving the beak into a not engaging position,
 - loading a target pigeon onto said device,
 - moving the beak into a position for engaging the target pigeon, and 35
 - launching the target pigeon.
10. A method according to claim 9, where said target pigeon is automatically loaded from at least one magazine. 40

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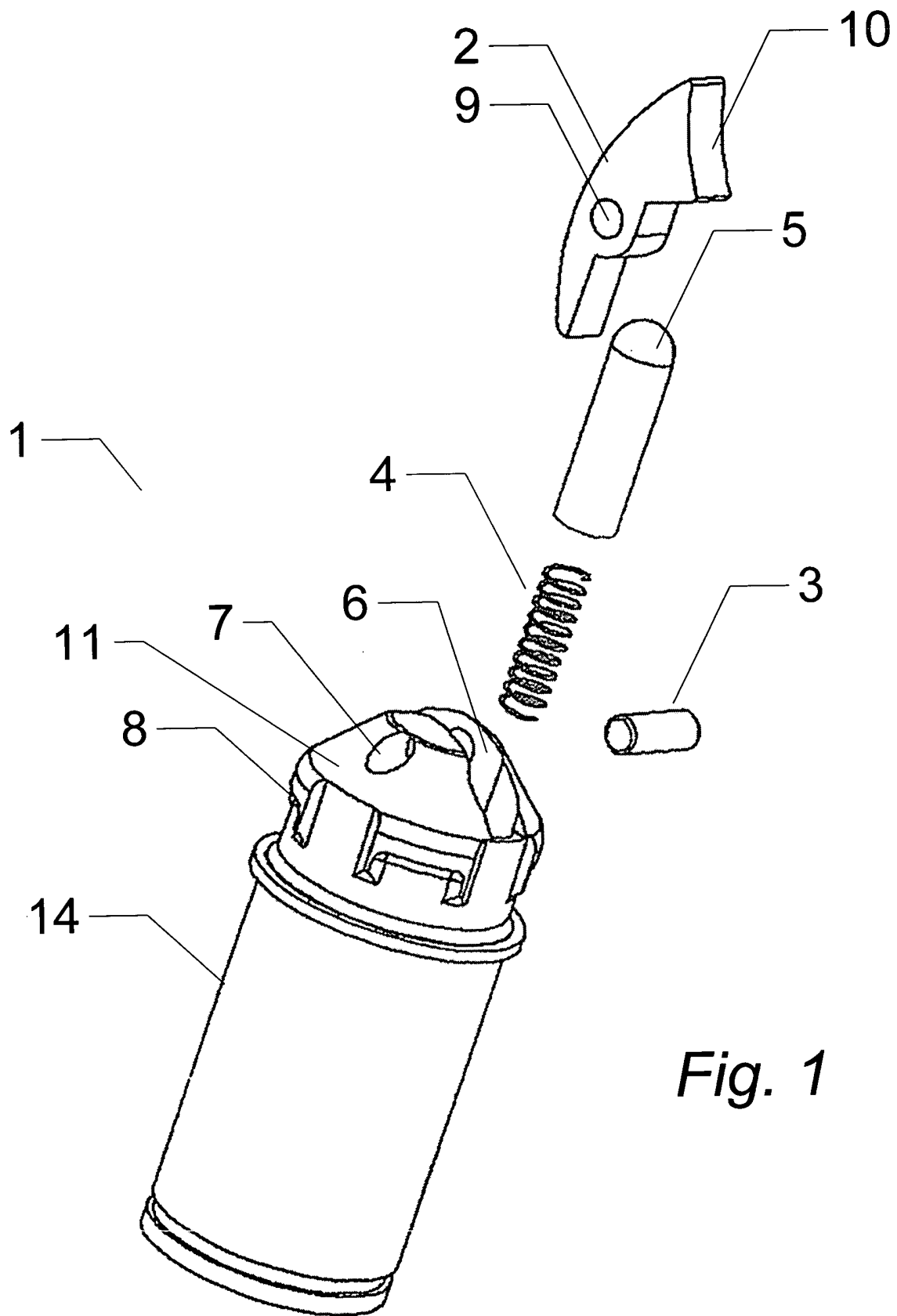
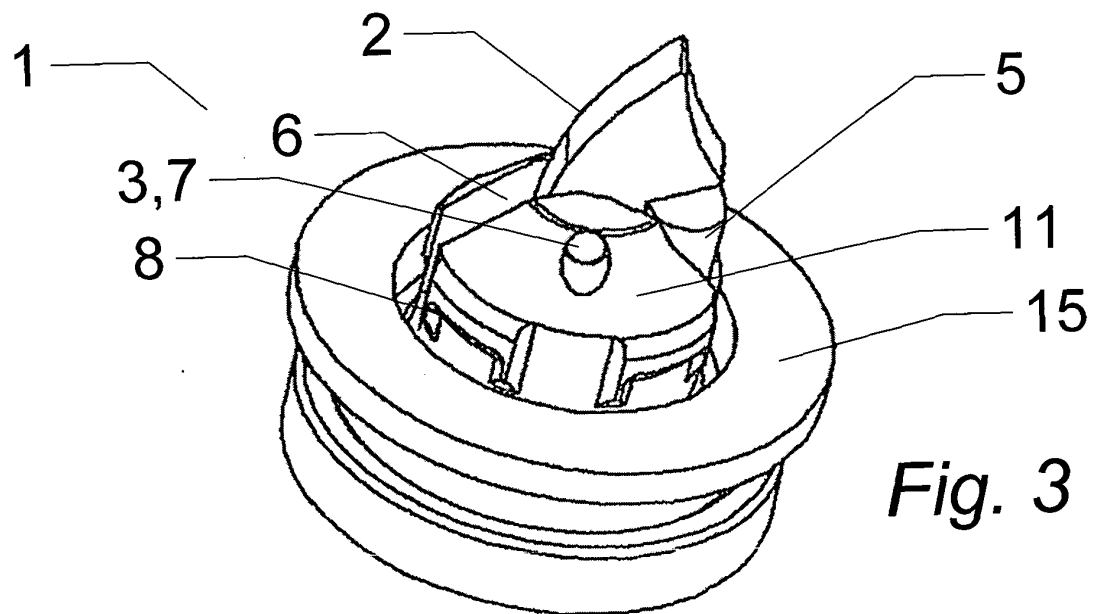
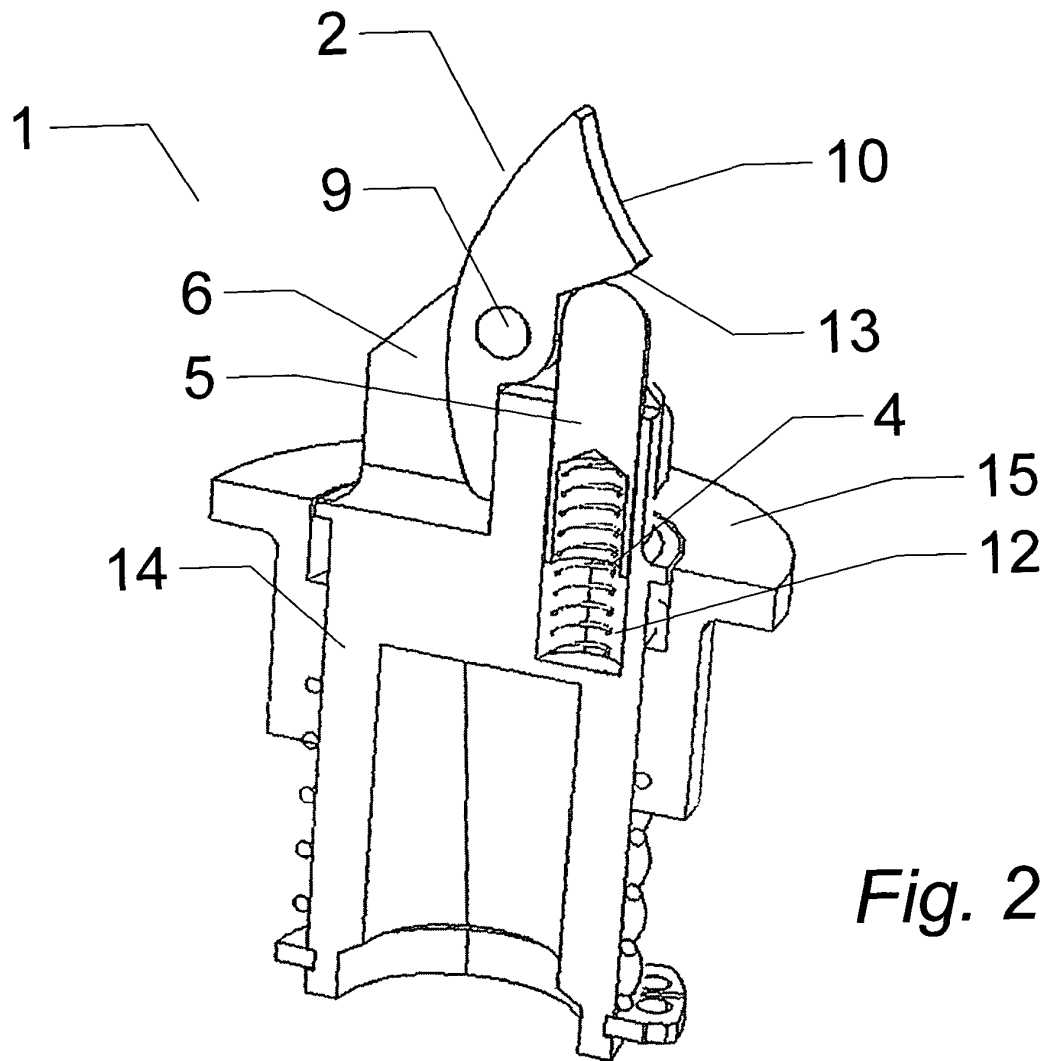


Fig. 1





European Patent
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EUROPEAN SEARCH REPORT

Application Number
EP 03 38 8064

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X,D	US 4 205 651 A (LANTE-MONTEFELTRO LUDOVICO) 3 June 1980 (1980-06-03) * column 2, line 47 - line 68 * * column 4, line 60 - line 65 * * column 10, line 4 - line 27 * * figures 1,8-11 *	1,3-7,9,10	F41J9/32
Y	---	8	
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The present search report has been drawn up for all claims			TECHNICAL FIELDS SEARCHED (Int.Cl.7)
			F41J A63B A63H
Place of search		Date of completion of the search	Examiner
THE HAGUE		16 February 2004	Gex-Collet, A-L
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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**ANNEX TO THE EUROPEAN SEARCH REPORT
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EP 03 38 8064

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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