



(12) **EUROPEAN PATENT APPLICATION**

(43) Date of publication:
09.01.2019 Bulletin 2019/02

(51) Int Cl.:
G07C 1/26 (2006.01)

(21) Application number: **17179685.7**

(22) Date of filing: **05.07.2017**

(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
Designated Validation States:
MA MD

(71) Applicant: **AVANCETEC CO., LTD.**
Taipei City 10479 (TW)

(72) Inventor: **CHANG, Kuang-Chih**
Taipei City 10479 (TW)

(74) Representative: **Lang, Christian**
LangPatent Anwaltskanzlei
Ingolstädter Straße 5
80807 München (DE)

(54) **LINKING VERIFICATION METHOD USED FOR ELECTRONIC CHIP RING IN PIGEON RACING**

(57) A linking verification method used for electronic chip ring in pigeon racing, and it is characterized in that: before performing the linking step for the foot ring and the electronic chip ring, the pigeon loft code verification step and the pigeon loft code locking step are performed in advance. Namely, firstly, the pigeon loft code in the pigeon clock and the verification region data in the electronic chip ring on the racing pigeon are read out, to compare if they are identical, if the answer is affirmative, that means it has passed successfully the pigeon loft code verification, such that linking can be performed. Otherwise, the verification region data is replaced with the pigeon loft code, and then it is locked. In this case, locking is allowed. and that means linking is performed the first time for the electronic chip ring.

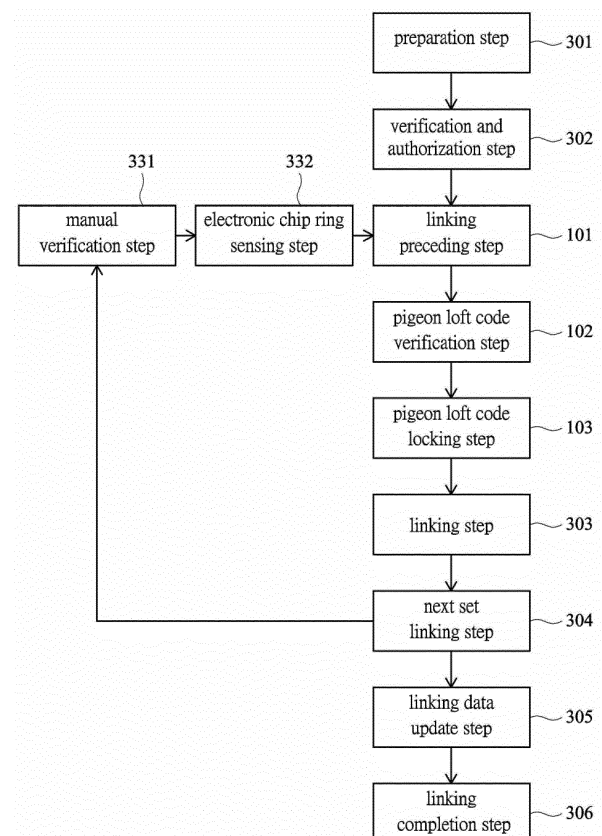


Fig. 1

Description

BACKGROUND OF THE INVENTION

FIELD OF THE INVENTION

[0001] The present invention relates to a linking verification method, and to a linking verification method used for electronic chip ring in pigeon racing. For which, pigeon loft code verification step and pigeon loft code locking step are performed before the linking step for electronic chip ring is performed.

THE PRIOR ARTS

[0002] Pigeon racing is a recreation of high class, in which people may derive much pleasure and enjoyment through raising and training pigeons, while the pigeon raising technique can be improved by exchanging experience in pigeon racing. Presently, pigeon racing associations are set up all over the world, and the pigeon racing events are quite numerous and are held every year. The glory of victory and huge sum of prize have attracted large number of pigeon loving people to participate in pigeon racing.

[0003] Due to the huge sum of prize involved in pigeon racing, frauds have happened quite often. To achieve fair competitions, the RFID electronic chip rings are utilized, and that can be classified into one-time-use close ring, and repeated-use open ring. For the applications of the close ring, few problems tend to develop, since the close ring tying to the leg of the young pigeon within one week of its birth (hatching out) is difficult to detach.

[0004] Yet, in certain countries, for cost saving or environment protection reasons, open rings are utilized, so that once it is used in a pigeon racing, it can be used again in the next racing. Yet, in practice, it is liable to be lost, stolen, or it can be mixed to use interchangeably with other open rings inadvertently, thus leading to irregularities and disputes.

[0005] However, conventionally, when it comes to formal pigeon racing, a verification method for accurate and precise ring sealing and linking are used, as shown in Fig. 5, comprising the following steps:

[0006] The operation preparation step 301: loading all linked pigeons into the pigeon clock, and this operation is connecting the computer of the Club Manager System to a pigeon clock via the club-antenna reader writer.

[0007] The verification and authorization step 302: connecting the pigeon clock to the club-antenna reader writer, to perform verification of the pigeon clock to ascertain it belongs to his Club fancier through using an authorization Tag.

[0008] The linking step 303: that includes performing firstly the manual verification step 331 and the electronic chip ring sensing step 332. In the manual verification step 331, the foot ring and the electronic chip ring are checked by visual inspection, to see if they conform to a valid

pigeon. While in the manual verification step 331, the identification code of the foot ring is selected from the pigeon clock to operate the linking process, Then the RFID electronic chip ring is placed in the sensing region of the club-antenna reader writer, to read out the data contained in page 4-5 magnetic region of the electronic chip ring, and that is used to link the foot ring and the electronic chip ring for the racing pigeon. Then, the data of the electronic chip ring is updated to the data in the pigeon clock.

[0009] The next set linking step 304: performing linking operation of the electronic chip ring 3 for the next racing pigeon 2 until all the electronic chip rings 3 are linked.

[0010] The linking data update step 305: connecting the pigeon clock to the computer of the Club Manager System via the club-antenna reader writer, to upload all the linking data in the computer of the Club Manager System.

[0011] The linking completion step 306: completing the linking operations of the electronic chip rings for all the racing pigeons.

[0012] For the conventional verification method mentioned above, though frauds and irregularities can be reduced by designing a series of precautionary measures; yet pigeon identification code can still be used interchangeably, to cause disputes in the racing results. For this reason, a fair and square method and rule are required to effectively prevent frauds and irregularities from happening.

SUMMARY OF THE INVENTION

[0013] To overcome the problems and shortcomings of the prior art, the present invention provides a linking verification method used for electronic chip ring in pigeon racing, including the following steps: a preparation step, a verification and authorization step, a linking preceding step, a pigeon loft code verification step, a pigeon loft code locking step, a linking step, a next set linking step, a linking data update step, and a linking completion step. The present invention is characterized in that: before performing the linking step for the foot ring and the electronic chip ring, the pigeon loft code verification step and the pigeon loft code locking step are performed in advance. Namely, firstly, the pigeon loft code in the pigeon clock and the verification region data in the RFID electronic chip ring are read out, to compare if they are identical. If the answer is affirmative, that means it has passed successfully the pigeon loft code verification, such that linking is allowed and performed. Otherwise, the verification region data is replaced with the pigeon loft code, and then it is locked. In case locking is allowed, that means linking is performed the first time for the electronic chip ring, the verification is successful and linking is allowed and performed. In case locking is not allowed, that means verification is not successful and linking is not allowed to be performed. By doing so, the conventional linking steps for the foot ring and the electronic chip ring are not af-

fectured, while a simple and effective verification mechanism is added in between, to avoid the mixed use of the electronic chip rings between the different lofts, and the possible ensuing disputes, in this approach, the pigeon racing can be fair and square, while improving the services of the pigeon association to the pigeon owners.

[0014] Further scope of the applicability of the present invention will become apparent from the detailed descriptions given hereinafter. However, the detailed descriptions and specific examples, while indicating preferred embodiments of the present invention, are given by way of illustration only, since various changes and modifications within the spirit and scope of the present invention will become apparent to those skilled in the art from the detailed descriptions.

BRIEF DESCRIPTION OF THE DRAWINGS

[0015] The related drawings about the detailed descriptions of the present invention to be made later are described briefly as follows, in which:

Fig. 1 is a flow chart for the steps of linking verification method used for electronic chip ring in pigeon racing according to the present invention;

Fig. 2 is a schematic diagram for a configuration of a racing pigeon having a foot ring, an electronic chip ring, a club-antenna reader writer, and a pigeon clock according to the present invention;

Fig. 3 is a perspective view of an open ring type electronic chip ring;

Fig. 4 is a flow chart for the steps of determining if linking can be performed; and

Fig. 5 is a flow chart for the steps of linking method used for electronic chip ring in pigeon racing according to the Prior Art.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

[0016] The purpose, construction, features, functions and advantages of the present invention can be appreciated and understood more thoroughly through the following detailed descriptions with reference to the attached drawings.

[0017] Refer to Figs. 1 to 5 respectively for a flow chart for the steps of linking verification method used for electronic chip ring in pigeon racing according to the present invention; a schematic diagram for a configuration of a racing pigeon having a foot ring, an electronic chip ring, a club-antenna reader writer, and a pigeon clock according to the present invention; a perspective view of an open ring type electronic chip ring; a flow chart for the steps of determining if linking can be performed; and a flow chart for the steps of linking method used for electronic chip ring in pigeon racing according to the Prior Art.

[0018] As shown in Figs. 1 to 3, the present invention provides linking verification method used for electronic

chip ring in pigeon racing, including the following steps: a preparation step 301, a verification and authorization step 302, a linking preceding step 101, a pigeon loft code verification step 102, a pigeon loft code locking step 103, a linking step 303, a next set linking step 304, a linking data update step 305, and a linking completion step 306.

[0019] The present invention is characterized in that: before performing the linking step 303 for the foot ring 31 and the electronic chip ring 3, the pigeon loft code verification step 102 and the pigeon loft code locking step 103 are performed in advance. Namely, firstly, the pigeon loft code in the pigeon clock 1 and the verification region data in the RFID electronic chip ring 3 of the racing pigeon 2 are read out, to compare if they are identical. If the answer is affirmative, that means it has passed successfully the pigeon loft code verification, such that linking is allowed and performed. Otherwise, the verification region data is replaced with the pigeon loft code, and then it is locked. In case locking is allowed, that means linking is performed the first time for the electronic chip ring 3, the verification is successful and linking is allowed and performed. In case locking is not allowed, that means verification is not successful and linking is not allowed to be performed.

[0020] By doing so, the conventional linking for the foot ring 31 and the electronic chip ring 3 is not affected, while a simple and effective verification mechanism is added in between, to avoid the mixed use of the electronic chip rings 3 between the racing pigeons 2, and the possible ensuing disputes. In this approach, the pigeon racing can be fair and square, while improving the services of the pigeon association to the pigeon owners.

[0021] In an embodiment of the present invention, the electronic chip (not shown) used in the electronic chip rings 3 can be HTC IC H56 or HTS IC H48 of PHILLIPS Corporation. In the linking step 303, data in the pages 4-5 of magnetic region for the electronic chip of the electronic chip ring 3 is read out through the club-antenna reader writer 4; while the verification region data of the electronic chip rings 3 is the data in pages 6-7 of magnetic region for the electronic chip of the electronic chip ring 3.

[0022] As shown in Figs. 1 to 4, the various steps of the present invention are explained in detail as follows:

[0023] The operation preparation step 301: loading all the data of the foot ring 31 for linked racing pigeons 2 into the pigeon clock 1, and connecting the computer of the Club Manager System (not shown) to a pigeon clock 1 via a club-antenna reader writer 4.

[0024] The verification and authorization step 302: connecting the pigeon clock 1 to the club-antenna reader writer 4, to perform verification of the pigeon clock 1 to ascertain it belongs to this pigeon club fancier through using an authorization Tag.

[0025] The linking preceding step 101: it mainly includes the manual verification step 331 and the electronic chip ring sensing step 332. In the manual verification step 331, the foot ring and the electronic chip ring are checked by visual inspection, to see if they conform to a valid

pigeon of the pigeon racing. While in the electronic chip ring sensing step 332, the identification code of the foot ring 31 is selected from the pigeon clock 1, to check if the foot ring code does exist in the pigeon clock 1. Then, the RFID electronic chip ring 3 is placed in the sensing region of the club-antenna reader writer 4 to be sensed.

[0026] The pigeon loft code verification step 102: in which the pigeon loft code of the pigeon clock 1, and the verification region data in pages 6-7 for the electronic chip ring 3 of the racing pigeon 2 are read respectively, to compare and check if the pigeon loft code and the verification region data are identical. If the answer is affirmative, then perform the subsequent linking step 303, otherwise, perform the pigeon loft code locking step 103.

[0027] The pigeon loft code locking step 103: replacing the verification region data in pages 6-7 with the pigeon loft code, and then lock the newly updated verification region data in pages 6-7. In case locking is allowed and successful, that means that linking is performed for the first time for the electronic chip ring 3, the verification is successful and linking is allowed and performed. In case the locking is not allowed, that means the verification region data in pages 6-7 has already locked and thus it can not be changed (namely, it is an OTP: One Time Process). Meanwhile, that means the pigeon loft does not belong to the original owner of the electronic chip ring 3. Therefore, the linking step 303 is not allowed to perform.

[0028] Through the simple and effective verification mechanism mentioned above, only the electronic chip rings 3 passing the verification successfully can join in the linking step 303. In the linking step 303, the data in pages 4-5 of the electronic chip ring 3 is read out through the club-antenna reader writer 4, and that is used to link the electronic chip rings 3 with the foot ring 31. Then, the linking data of the electronic chip rings 3 is updated into the record of the pigeon clock 1.

[0029] The next set linking step 304: performing linking operation of the electronic chip ring 3 for the next racing pigeon 2 until all the electronic chip rings 3 of this loft are linked.

[0030] The linking data update step 305: connecting the pigeon clock 1 to the computer of the Club Manager System (not shown) via the club-antenna reader writer 4, to update all the linking data in the computer of the Club Manager System.

[0031] The linking completion step 306: completing the linking operations of the electronic chip rings 3 for all the racing pigeons 2 of this loft.

[0032] In a preferred embodiment of the present invention, as shown in Figs. 1 and 4, the pigeon loft code verification step 102 and the pigeon loft code locking step 103 further includes the following steps:

[0033] The step 201: read out the pigeon loft code. The step 202: read out the verification region data of the electronic chip ring 3.

[0034] The step 203: determine if the verification region data of the electronic chip rings 3 and the pigeon loft code

are identical. In case the answer is affirmative, proceed to step 204, otherwise, proceed to the step 205.

[0035] The step 204: perform linking for the foot ring 31 and the electronic chip ring 3.

[0036] The step 205: replace the verification region data of the electronic chip ring 3 with the pigeon loft code, then have it locked.

[0037] The step 206: determine if the locking is successful, and in case the answer is affirmative, proceed to step 204, otherwise proceed to step 207.

[0038] The step 207: verification fails, linking is not allowed.

[0039] The step 208: determine if all the electronic chip rings 3 of the racing pigeons 2 are processed. In case the answer is affirmative, proceed to step 305 to perform linking data update, otherwise proceed to step 201, perform linking of the electronic chip ring 3 for the next racing pigeon 2.

[0040] Summing up the above, the principle of the present invention can be summarized as follows. As shown in Figs. 1 and 2, before performing the linking step 303 for the foot ring 31 and the electronic chip ring 3, the pigeon loft code verification step 102 and the pigeon loft code locking step 103 are performed in advance. Namely, firstly, the pigeon loft code in the pigeon clock 1 and the verification region data in the RFID electronic chip ring 3 are read out, to compare if they are identical. If the answer is affirmative, that means it has successfully passed the pigeon loft code verification, such that linking is allowed and performed. Otherwise, the verification region data is replaced with the pigeon loft code, and then it is locked. In case locking is allowed, that means linking is performed the first time for the electronic chip ring 3, the verification is successful and linking is allowed and performed. In case locking is not allowed, that means verification is not successful and linking is not allowed to be performed. By doing so, the conventional linking for the foot ring 31 and the electronic chip ring 3 is not affected, while a simple and effective verification mechanism is added in between, to avoid the mixed use of the electronic chip rings 3 between the different lofts, and the possible ensuing disputes, in this approach, the pigeon racing can be fair and square, while improving the services of the pigeon association to the pigeon owners.

[0041] The above detailed description of the preferred embodiment is intended to describe more clearly the characteristics and spirit of the present invention. However, the preferred embodiments disclosed above are not intended to be any restrictions to the scope of the present invention. Conversely, its purpose is to include the various changes and equivalent arrangements which are within the scope of the appended claims.

Claims

1. A linking verification method used for electronic chip ring in pigeon racing, comprising the following steps:

- a preparation step, a verification and authorization step, a linking preceding step, a pigeon loft code verification step, a pigeon loft code locking step, a linking step, a next set linking step, a linking data update step, and a linking completion step, and is **characterized in that**: before performing the linking step for an foot ring and an electronic chip ring, the pigeon loft code verification step and the pigeon loft code locking step are performed in advance, namely, firstly, a pigeon loft code in a pigeon clock and the verification region data in the electronic chip ring on a racing pigeon are read out, to compare if they are identical, if an answer is affirmative, that means it has passed successfully the pigeon loft code verification, such that linking is allowed and performed; otherwise, the verification region data is replaced with the pigeon loft code, and then it is locked; in case locking is allowed and performed, that means linking is performed the first time for the electronic chip ring, the verification is successful and linking is allowed and performed; in case locking is not allowed, that means verification is not successful and linking is not allowed to be performed; by doing so, a conventional linking for the foot ring and the electronic chip ring is not affected, while a verification mechanism is added in between, to avoid the mixed use of the electronic chip rings between different lofts, and the possible ensuing disputes; in this approach, the pigeon racing is fair and square, while improving the services of a pigeon association to pigeon owners.
2. The linking verification method used for electronic chip ring in pigeon racing as claimed in claim 1, wherein an electronic chip used in the electronic chip ring is one of HTC IC H56 and HTS IC H48 of PHILIPS Corporation.
 3. The linking verification method used for electronic chip ring in pigeon racing as claimed in claim 2, wherein in the linking step, data in pages 4-5 of a magnetic region for the electronic chip of the electronic chip ring is read out through a club-antenna reader writer.
 4. The linking verification method used for electronic chip ring in pigeon racing as claimed in claim 3, wherein the verification region data of the electronic chip ring is the data in pages 6-7 of the magnetic region for the electronic chip of the electronic chip ring.
 5. The linking verification method used for electronic chip ring in pigeon racing as claimed in claim 4, wherein the preparation step: loading all linked data of the

racing pigeon into the pigeon clock, and connecting a computer of the Club Manager System to the pigeon clock via the club-antenna reader writer;

the verification and authorization step: connecting the pigeon clock to the club-antenna reader writer, to perform verification of the pigeon clock to ascertain it belongs to the club through using an authorization tag;

the linking preceding step: it mainly includes a manual verification step and an electronic chip ring sensing step, in the manual verification step, the foot ring and the electronic chip ring are checked by visual inspection, to see if they conform to a valid pigeon, while in the electronic chip ring sensing step, an identification code of the foot ring is selected from the pigeon clock, to check if the identification code does exist in the pigeon clock, then, the electronic chip ring is placed in a sensing region of the club-antenna reader writer to be sensed;

the pigeon loft code verification step: in which a pigeon loft code of the pigeon clock, and the verification region data in pages 6-7 for the electronic chip ring of the racing pigeon are read out respectively, to compare and check if the pigeon loft code and the verification region data are identical, if the answer is affirmative, then perform the subsequent linking step, otherwise, perform the pigeon loft code locking step;

the pigeon loft code locking step: replacing the verification region data in the pages 6-7 with the pigeon loft code, and then lock the newly updated verification region data in the pages 6-7, in case the locking is allowed and successful, that means that linking is performed the first time for the electronic chip ring, the verification is successful and linking is allowed and performed, in case locking is not allowed, that means the verification region data in the pages 6-7 has already been locked and thus it is not allowed to be changed, therefore, the linking step is not allowed to be performed;

the linking step: the data in pages 4-5 of the electronic chip ring is read out through the club-antenna reader writer, and that is used to pair the electronic chip ring with the identification code ring, then, the linking data of the electronic chip rings is updated into the record of the pigeon clock;

the next set linking step: performing linking operation of the electronic chip ring for the next racing pigeon, until all the electronic chip rings of the racing pigeons of a loft are linked;

the linking data update step: connecting the pigeon clock to the computer of the Club Management System via the club-antenna reader writer, to update all the linking data in the computer of the Club Management System; and

the linking completion step: completing the linking operations of the electronic chip rings for all the racing pigeons of the loft.

6. The linking verification method used for electronic chip ring in pigeon racing as claimed in claim 5, wherein the pigeon loft code verification step and the pigeon loft code locking step further includes the following steps: read out the pigeon loft code and the verification region data of the electronic chip ring, to determine if they are identical; if the answer is affirmative, then the verification is successful, and the linking is allowed and performed; otherwise, the verification is not successful, the verification region data is replaced with the pigeon loft code, and then it is locked; then determine if the locking is successful, and if the answer is affirmative, then perform the linking step, otherwise, the verification is not successful, and the linking is not allowed; then determine if all the electronic chip rings of the loft are processed, and if the answer is affirmative, perform linking data update step, otherwise, perform the next set linking step for the electronic chip ring of the next racing pigeon until all the electronic chip rings of the loft are linked.

25

30

35

40

45

50

55

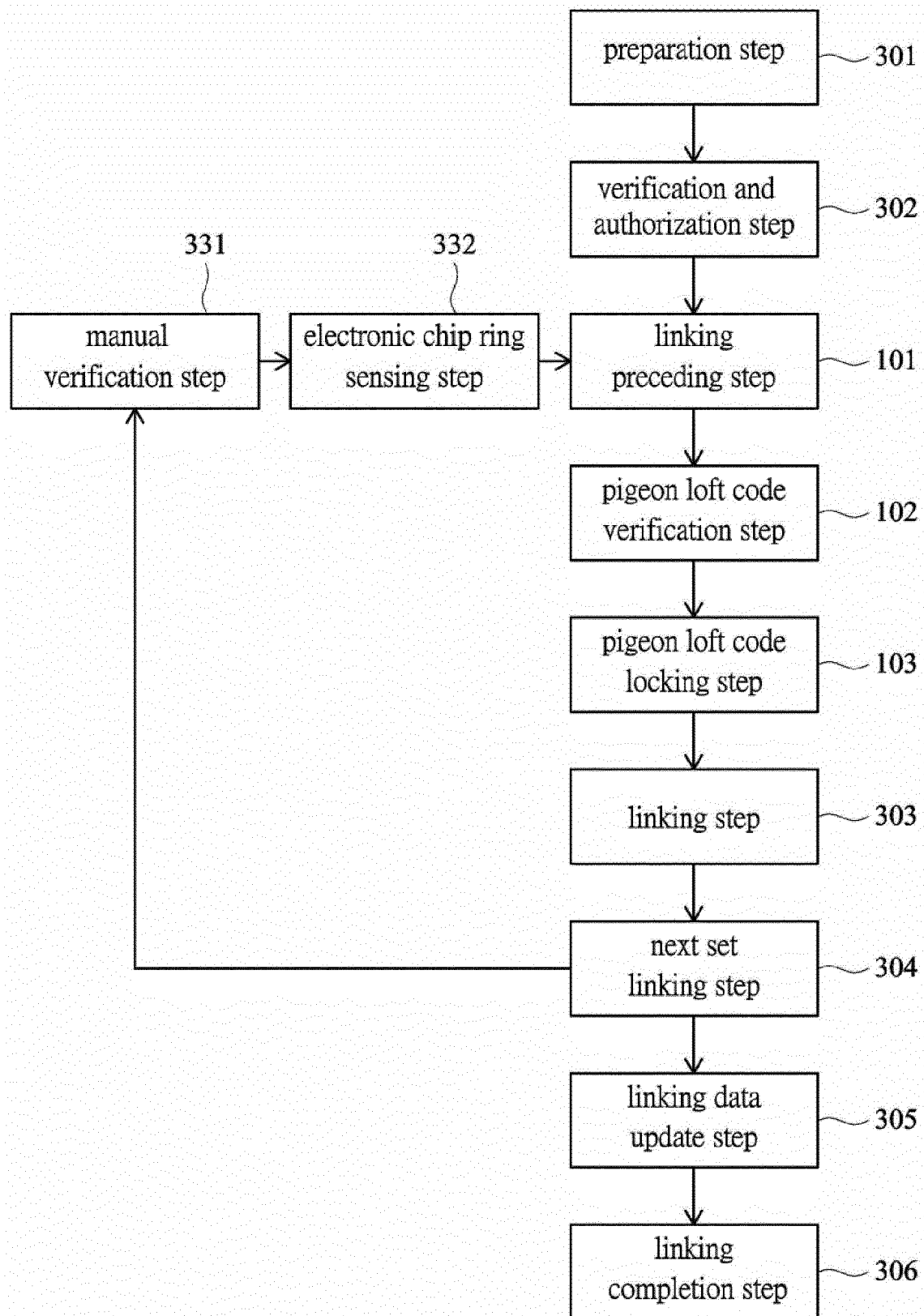


Fig. 1

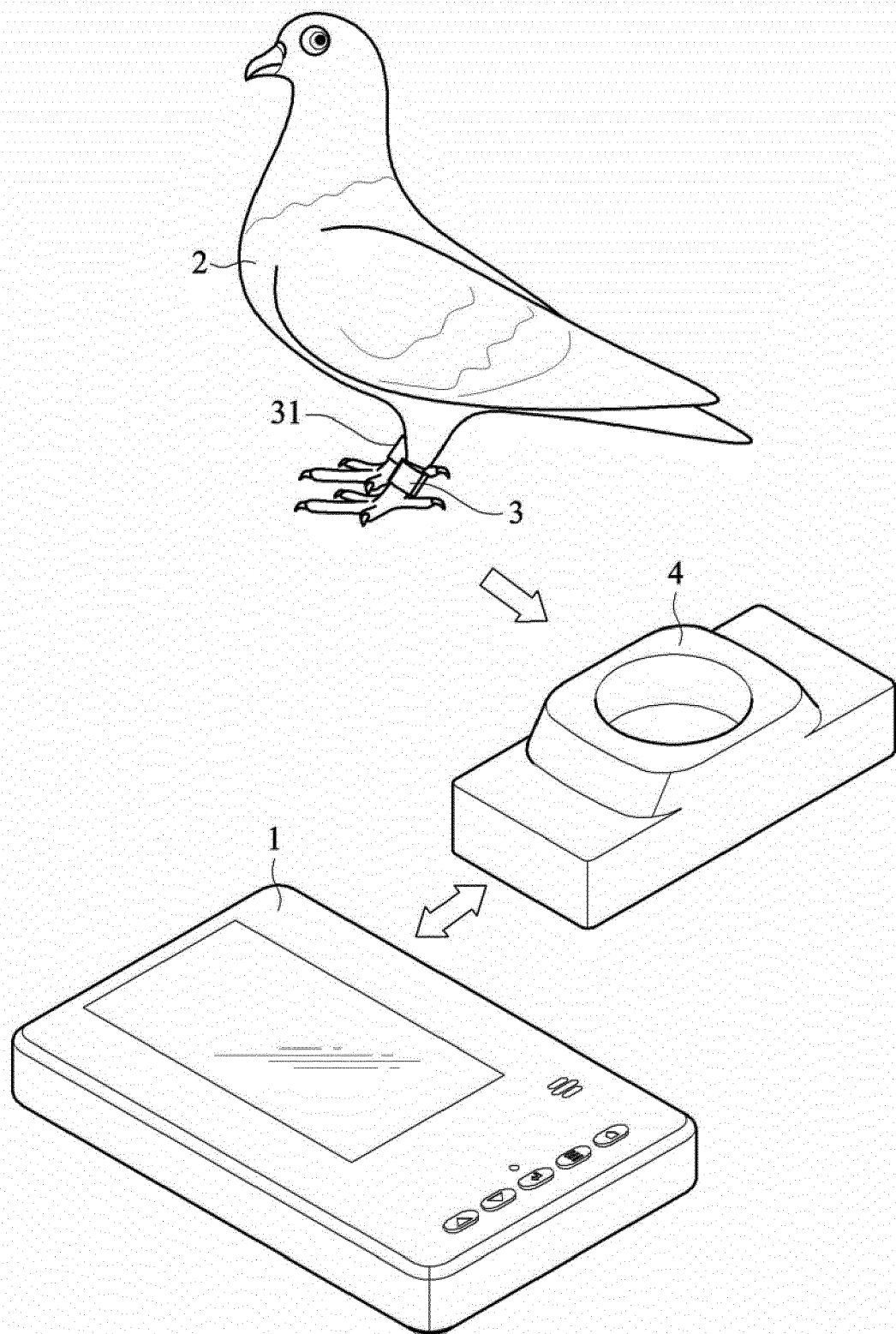
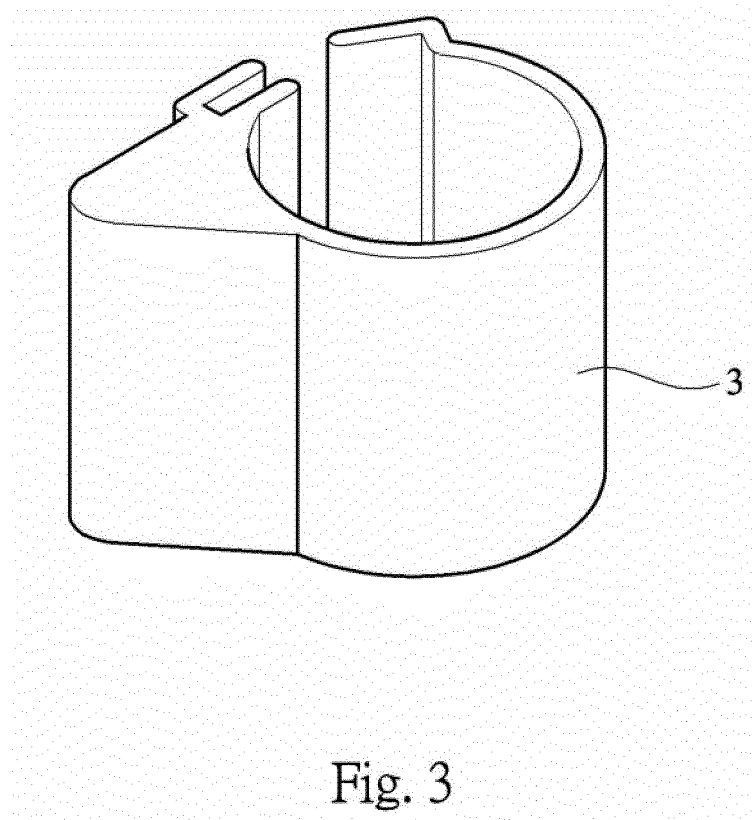


Fig. 2



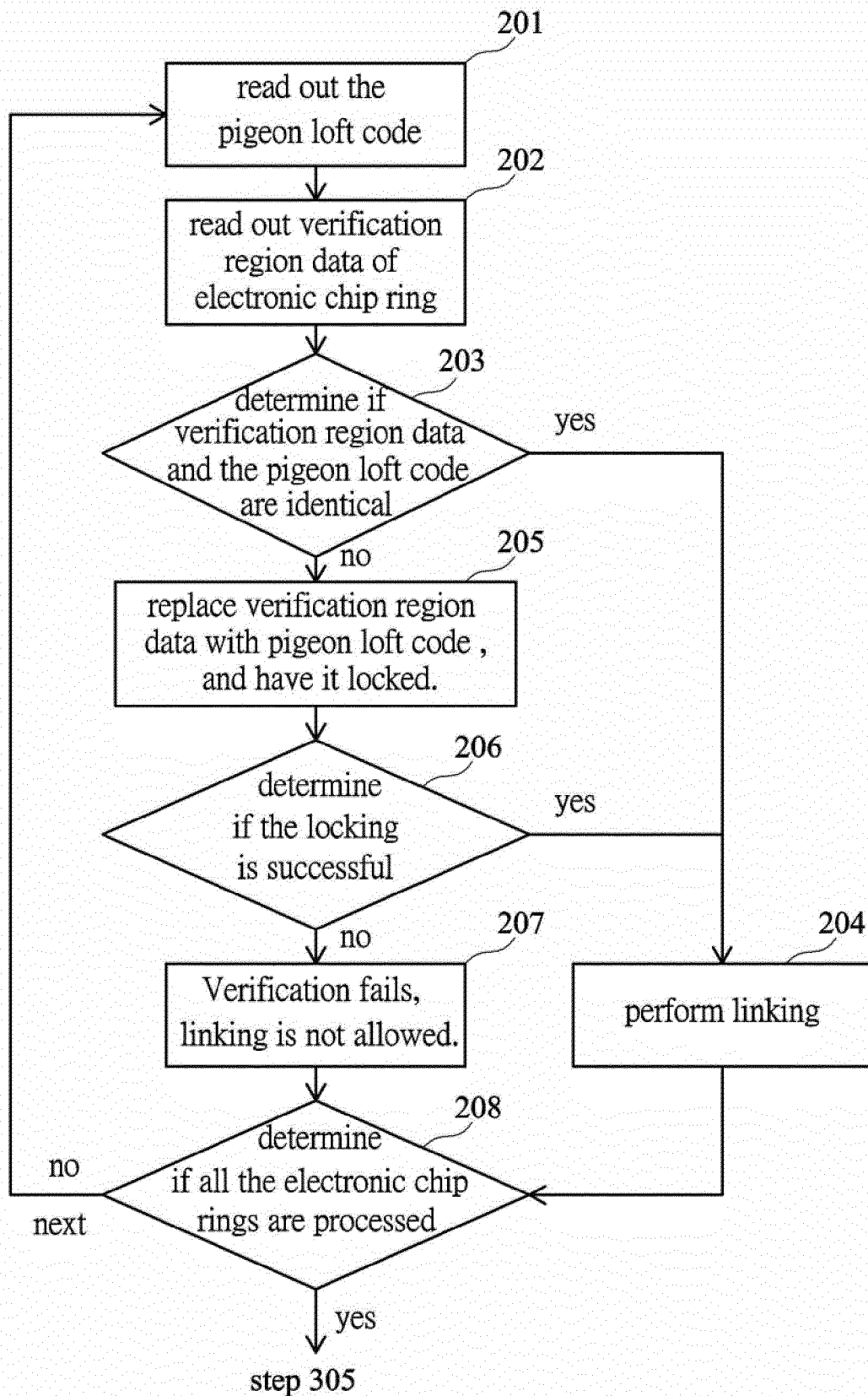


Fig. 4

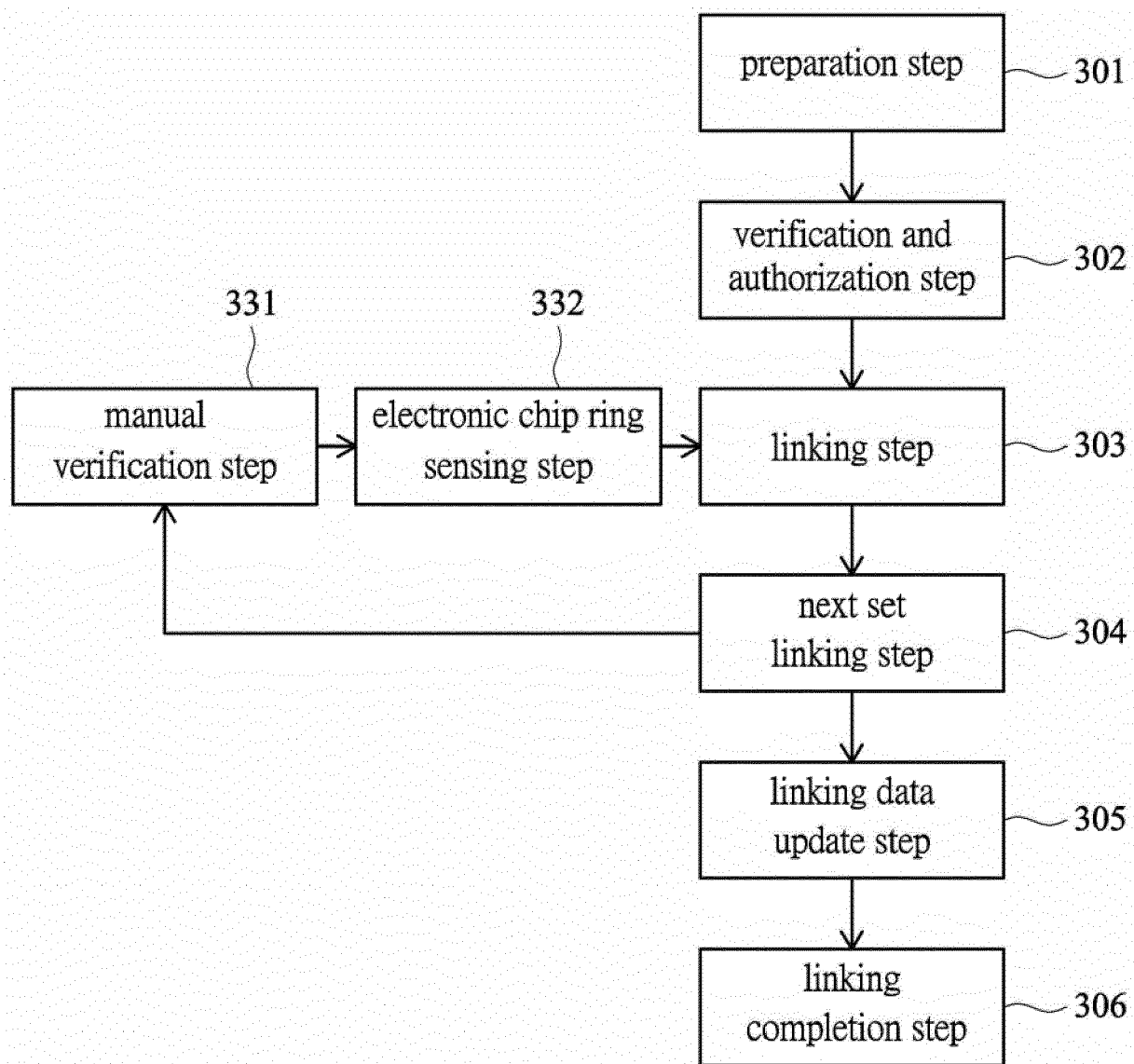


Fig. 5 (Prior Art)



EUROPEAN SEARCH REPORT

Application Number
EP 17 17 9685

5

10

15

20

25

30

35

40

45

50

55

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
A	EP 2 079 186 A2 (CHAO CHENG JIN-HAO [TW]; HO YU-LUN [TW]) 15 July 2009 (2009-07-15) * abstract * * * paragraphs [0004] - [0048] * * figures 1-5 *	1-6	INV. G07C1/26
A	EP 1 544 803 A2 (ASTRA GES FUER ASSET MAN MBH [DE]) 22 June 2005 (2005-06-22) * abstract * * * paragraph [0017] - paragraph [0045] * * figure 1 *	1-6	
A	EP 2 597 625 A2 (GANTNER PIGEON SYSTEMS GMBH [AT]) 29 May 2013 (2013-05-29) * abstract * * * paragraph [0011] - paragraph [0041] * * figures 1-3 *	1-6	
A	DE 195 28 279 C1 (BENZING TECH UHREN GMBH [DE]) 22 August 1996 (1996-08-22) * abstract * * * claim 1 *	1-6	TECHNICAL FIELDS SEARCHED (IPC)
A	GB 2 300 510 A (BENZING TECH UHREN GMBH [DE]) 6 November 1996 (1996-11-06) * abstract * *	1-6	G07C
The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 30 November 2017	Examiner Pañeda Fernández, J
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	

EPO FORM 1503 03.82 (P04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 17 17 9685

5

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
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

30-11-2017

10

15

20

25

30

35

40

45

50

55

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
EP 2079186 A2	15-07-2009	EP 2079186 A2	15-07-2009
		TW 200931327 A	16-07-2009
		US 2009181739 A1	16-07-2009
EP 1544803 A2	22-06-2005	DE 10360851 A1	01-09-2005
		EP 1544803 A2	22-06-2005
		JP 2005182827 A	07-07-2005
		TW 1354948 B	21-12-2011
EP 2597625 A2	29-05-2013	DE 102011119066 A1	23-05-2013
		EP 2597625 A2	29-05-2013
DE 19528279 C1	22-08-1996	NONE	
GB 2300510 A	06-11-1996	BE 1011001 A3	02-03-1999
		DE 19515363 A1	14-11-1996
		GB 2300510 A	06-11-1996
		NL 1002474 C2	18-08-1998