(19) Europäisches Patentamt
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(11) **EP 2 781 246 A1**

(12) **EUROPEAN PATENT APPLICATION**

(43) Date of publication:
24.09.2014 Bulletin 2014/39

(51) Int Cl.:
A63H 27/00 *(2006.01)*

(21) Application number: **13180179.7**

(22) Date of filing: **13.08.2013**

(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

(30) Priority: **17.03.2013 CN 201320119537 U**
17.03.2013 CN 201310083621

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(54) **Insert type wings connector for an aircraft model**

(57) An insert type wings connector for a wooden aircraft model, wherein one side of said connector (5; 11; 13; 15) has an insert section (7) corresponding to a slot (6) in a fuselage (1; 9; 10; 12), wherein on the other side the surface of the insert type wings connector (5; 11; 13; 15) for installation of wings (2) has the same incidence angle for the wings (2).

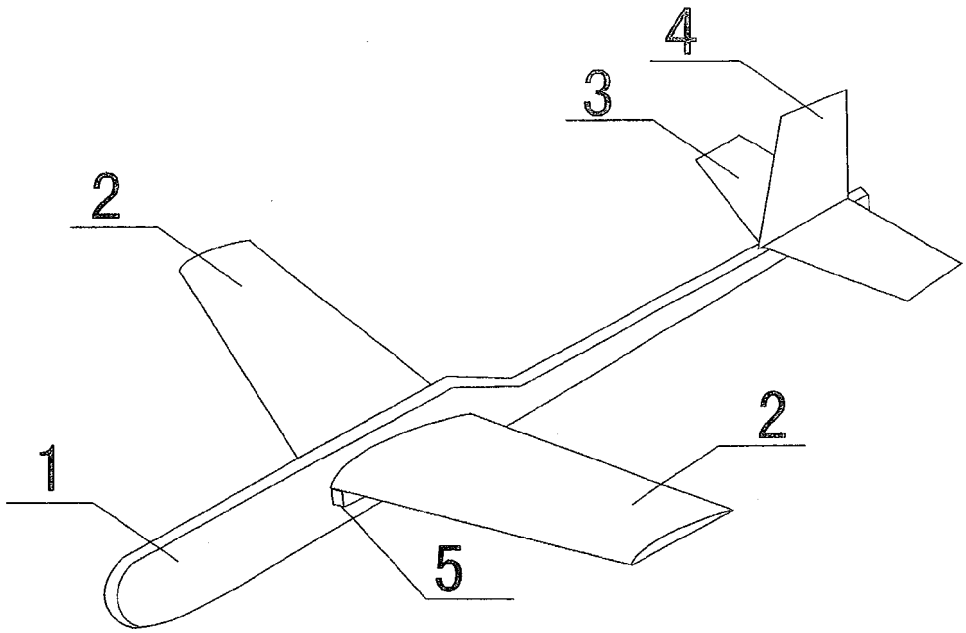

Fig. 1

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Description

Technical Field

[0001] This invention can be used to connect the wings and the fuselage for wooden aircraft models, in particular wooden aircraft models. With this insert type wing connector one can position the wings precisely and quickly and connect them together. At the same time, it provides more strength between the wings and the fuselage. The insert type wing connector forms a component for making the wooden aircraft model.

Technical Background

[0002] During the activities of wooden aircraft model making, lots of amateurs, especially younger ones, do have difficulties because the components require a high accuracy to fit them together. For instance, the incidence angle of the wings may not be positioned precisely, the paste surface or the edge of the wing with the contact surface on a fuselage can be too small. These problems can cause the aircraft model to be deformed if one does not assemble it carefully. If an incidence angle of the wings is not positioned precisely, this can even cause a serious problem that forms an installation failure since the aircraft model cannot fly after the complete assembly. The solution proposed in patent ZL 2011 2 0240609.8 can only solve the problems of cumbersome installation for the wings and provides more strength to the wings. The weak point of the proposed solution is that one needs professional tools with massive measurement works during the installation of the wings if the wings will be installed on both sides of the fuselage. The measurements of an incidence angle to position the wings will be even more troublesome for young amateurs.

[0003] An object of this invention is to overcome the existing problems during the wooden aircraft model installation as mentioned above. The insert type wings connector design according to the present invention allows to accurately position the incidence angles of the wings, a fast connection on the fuselage and provides more strength to the connection between the wings and the fuselage of the wooden aircraft models.

[0004] Possible embodiments of different aspects of the present invention are described in more detail with respect to the enclosed Figures.

Fig. 1 shows a general assembly diagram for a wooden aircraft model;

Fig. 2 shows a assembly schematic drawing of a lateral insert type wings connector for a wooden aircraft model;

Fig. 3 shows a sketch of a lateral insert type wings connector for a wooden aircraft model;

Fig. 4 shows an insert type wings connector plug-in from the top;

Fig. 5 shows a top connecting insert type wings connector for the wooden aircraft model;

Fig. 6 shows an insert type wings connector plug-in schematic from the bottom;

Fig. 7 shows a bottom connecting insert type wings connector for a wooden aircraft model;

Fig. 8 shows a further bottom connecting insert type wings connector of the wings for a wooden aircraft model.

[0005] Used reference numbers of components:

1. Fuselage
2. Aircraft wings
3. Horizontal tail
4. Vertical tail
5. Insert type wings connector for a wooden aircraft model
6. Slot of the insert type wings connector
7. Insert section of the insert type wings connector
8. The surface of insert type wings connector for installation of the fuselage
9. The surface of insert type wings connector for installation of the wings
10. Fuselage for the top insert type wings connector
11. Top insert type wings connector
12. Fuselage for the bottom insert type wings connector
13. Bottom insert type wings connector
14. Fuselage surface of the bottom insert fuselage type
15. Bottom insert type wing connector of bottom insert wings for a wooden aircraft model

[0006] A slot 6 in the fuselage 1 of the wooden aircraft model is provided that can connect the insert type wings connector 5. At the same time, the slot 6 matches a position to assemble the wings 2 and matches the incidence angle that the wings 2 require. The side surfaces with the insert sections 7 of the insert type wing connector 5 do directly plug into the slot 6 of the fuselage 1. The wings 2 directly connect on the top surface of the insert type wing connector 5. Complete installation or assembly of the wings 2 and the fuselage 1 is provided by the insert type wings connector 5 for the wooden aircraft model according the present invention.

[0007] As illustrated in Figs. 1 to 3, in a first embodiment, a vertical tail 4 is put on a horizontal tail 3 and then they are put together on a fuselage 1. Then, the separated insert sections 7 that separate, the left and right sides of the insert type wings connector 5 each having a surface 8 for installation to the fuselage 1 are put into the

slot 6. After that, the wings 2 are put onto a surface 9 of the insert type wings connector 5 for installation of the wings 2. In this way, a wooden aircraft model with accurate incidence angles and precise positioning of the wings 2 and a structure with relatively more mechanical strength of a connection with each single wing 2 in the middle has been completed conveniently.

[0008] As illustrated in Figs. 4, 5, in a second embodiment, first of all, the vertical tail 4 is put on the horizontal tail 3 and then they are put together on a fuselage 10. Then, an insert section 7 that separates the top insert type wings connector 11 having a surface 8 for installation of the fuselage 10 on the left and right side is put into the slot 6. After that, the wings 2 are put onto the surface 9 of the insert type wings connector 11 for installation of the wings 2. In this way, a wooden aircraft model with accurate incidence angle and precisely positioning of the wings 2 and a relatively stronger structure with each single wing 2 in the middle has been completed conveniently.

[0009] As illustrated in Figs. 6, 7, in a third embodiment, first the vertical tail 4 is put on the horizontal tail 3 and they are put together on a fuselage 12. Then, the insert section 7 that separates the left and right side of the surface for installation of the fuselage 12 of the bottom insert type wings connector 13 is put into the slot 6. After that, the wings 2 are put onto the surface 9 of the insert type wings connector 13 for installation of the wings 2. In this way, a wooden aircraft model with accurate incidence angle and precisely positioning of the wings 2, a relatively stronger strength structure with each single wing 2 in the middle has been completed conveniently.

[0010] As illustrated in Fig. 8, in a fourth embodiment, first the vertical tail 4 is put on the horizontal tail 3 and they are put together on the fuselage 12. Then, the insert section 7 that separates the left and right side of the surface 8 for installation of the fuselage 12 of the bottom insert type wings connector 15 is put into the slot 6. After that, the wings 2 are put onto the surface 14 of bottom insert type wings connector 15 for installation of the wings 2. In this way, a wooden aircraft model with accurate incidence angle and precisely positioning of the wings 2, a relatively higher strength structure with each single wing 2 in the middle has been completed conveniently.

[0011] The incidence or inclination angle for attaching the wings 2 can vary depending on aircraft model type. The insert type wings connectors are made in a preferred embodiment of wood. They can comprise in alternative embodiments other materials as well. The insert type wings connectors 5, 11, 13, 15 can be plugged into or onto the slots 6 of the fuselage 1, 10, 12 without use of any glue. In a possible embodiment, the wings 2 are attached or glued to the installation surfaces 9, 14 of insert type wing connectors 5, 11, 13, 15.

Claims

1. An insert type wings connector for a wooden aircraft model, wherein one side of said connector (5; 11; 13; 15) has an insert section (7) corresponding to a slot (6) in a fuselage (1; 9; 10; 12), wherein on the other side the surface of the insert type wings connector (5; 11; 13; 15) for installation of wings (2) has the same incidence angle for the wings (2).

2. The insert type wings connector according to claim 1, wherein the insert type wings connector (5; 11; 13; 15) comprises a lateral insert type wings connector (5), a top insert type wings connector (11), or a bottom insert type wings connector (13; 15).

3. The insert type wings connector for a wooden aircraft model according to claim 2, wherein the lateral insert type wings connector (5) goes through the fuselage (1) by connecting into the slot (6), wherein the insert sections (7) of the insert type wings connector (5) and the surface (9) of the insert type wings connector (5) for installation of the wings (2) to the insert type wings connector (5) connects the wings (2) on the fuselage (1) together.

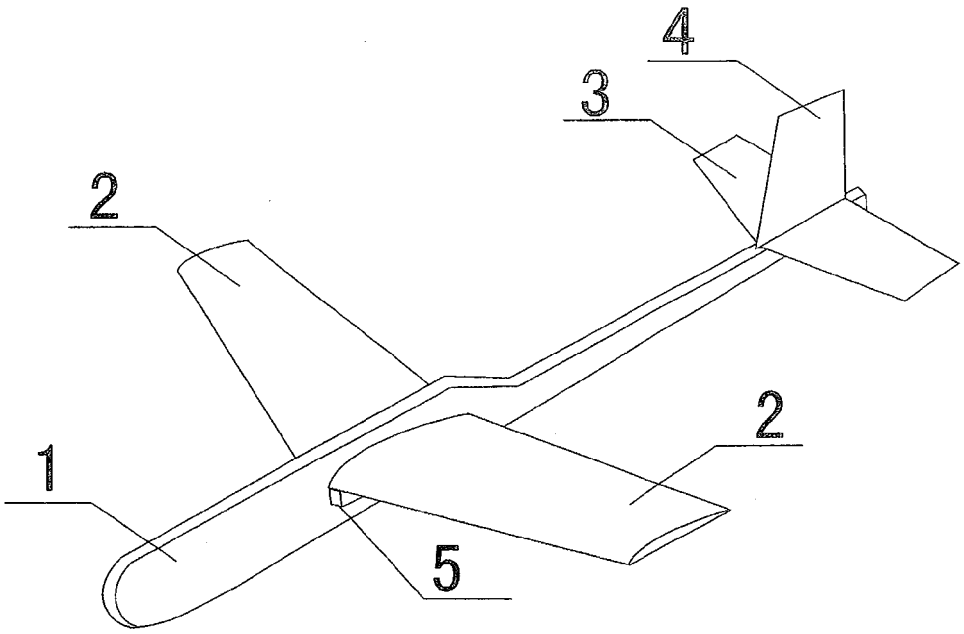

Fig. 1

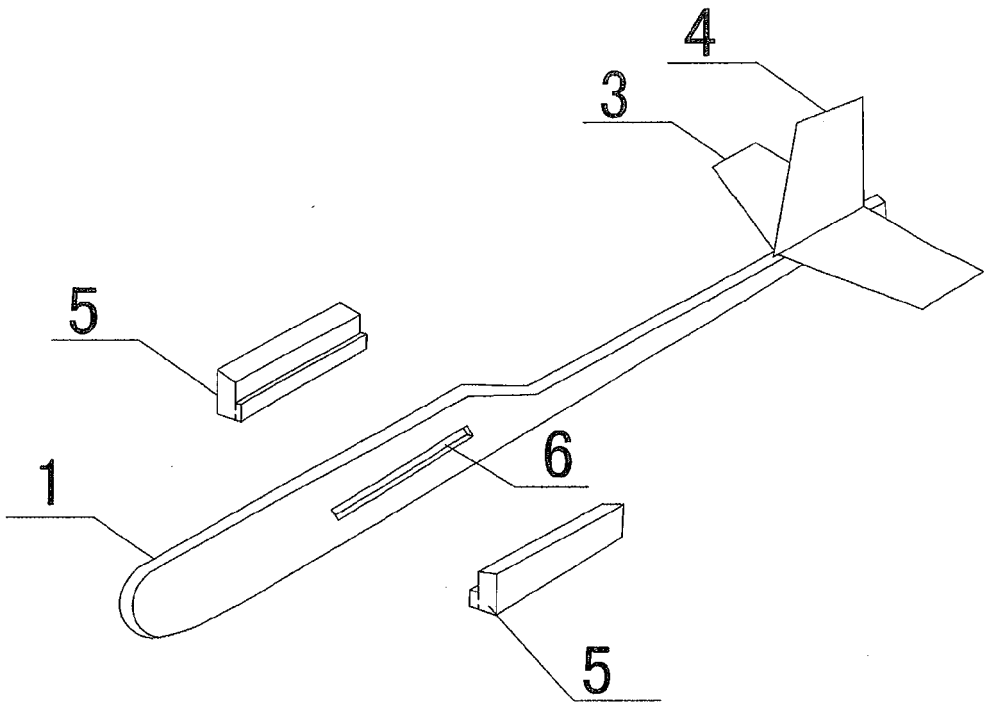

Fig. 2

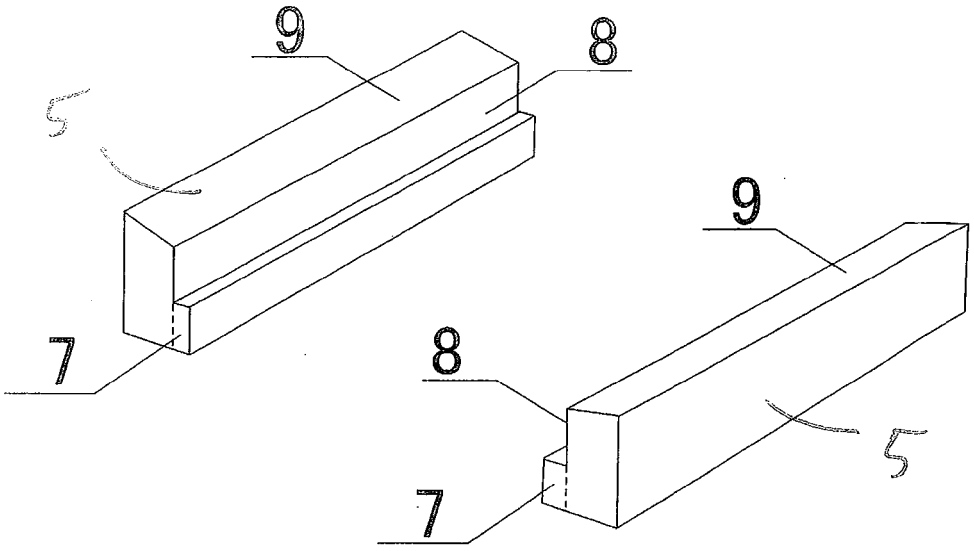

Fig. 3

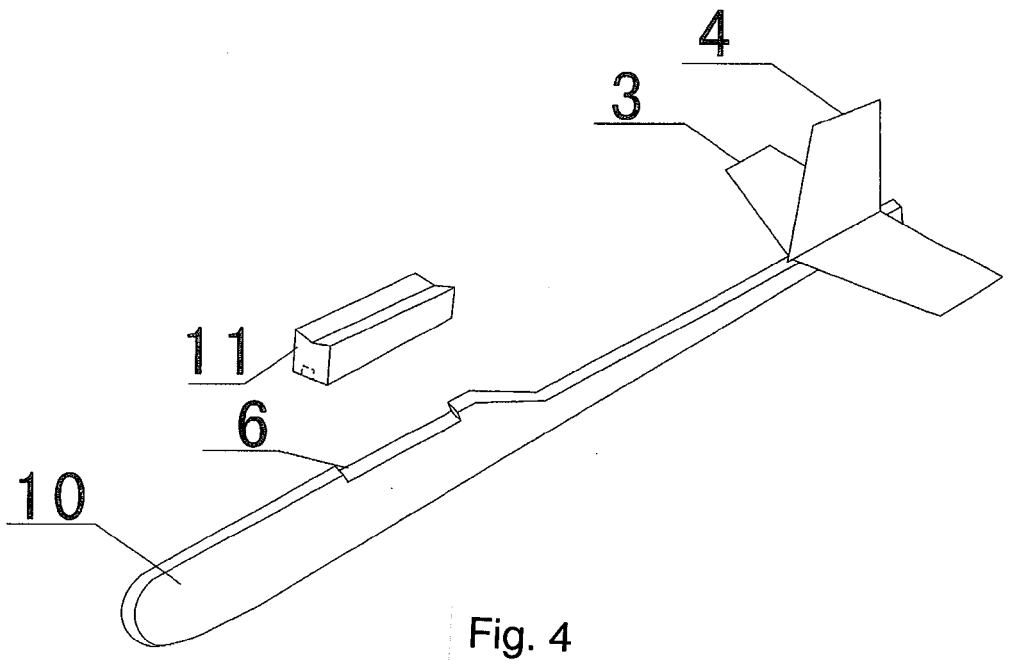

Fig. 4

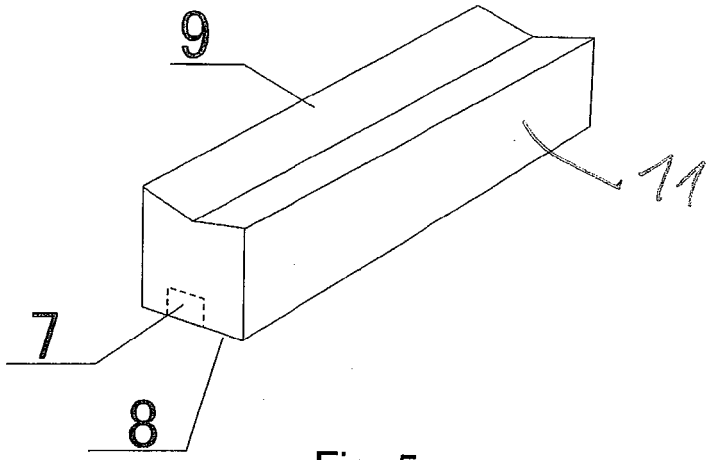

Fig. 5

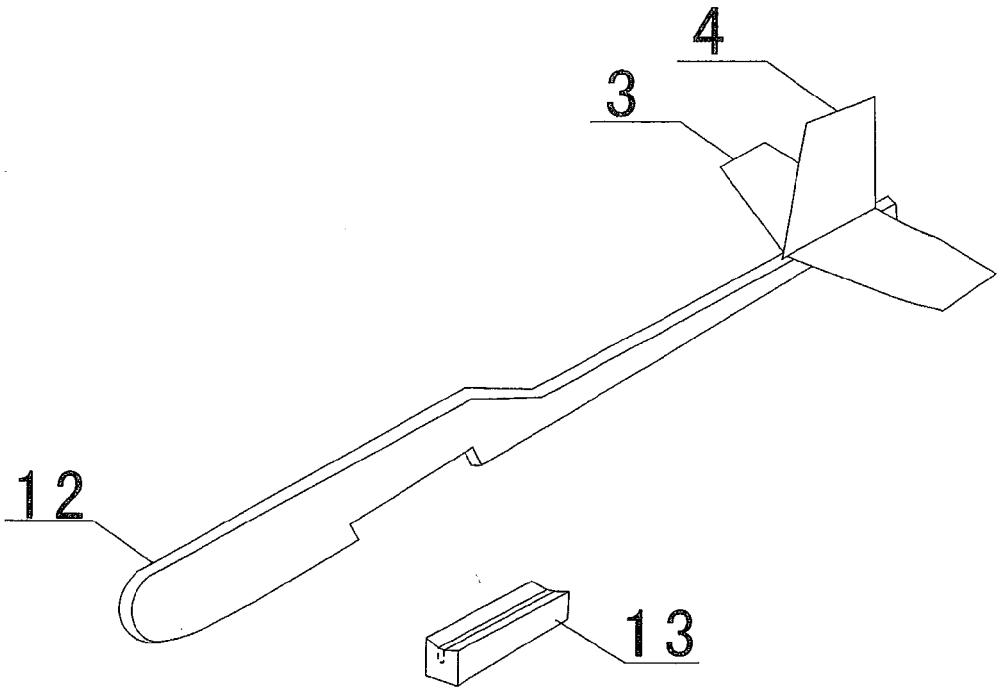

Fig. 6

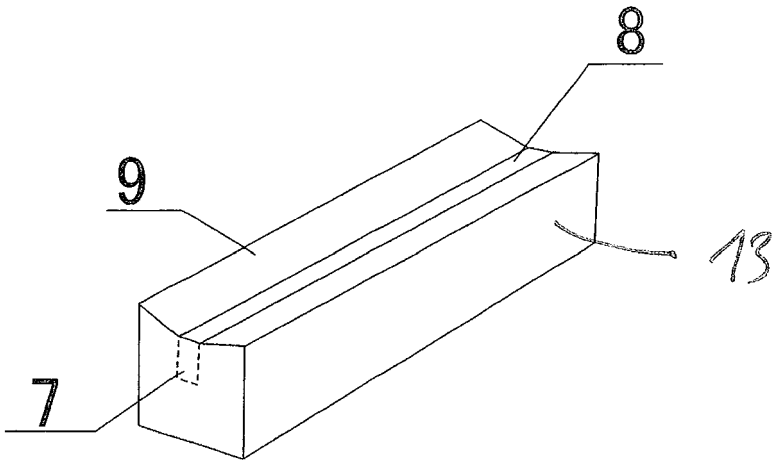

Fig. 7

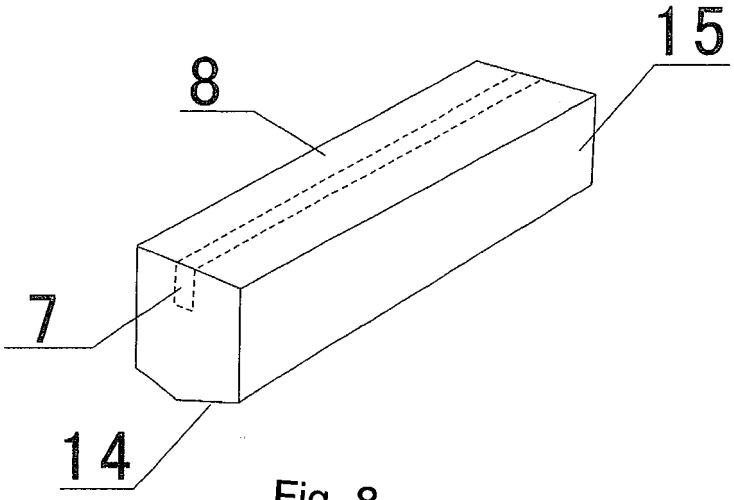

Fig. 8

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EUROPEAN SEARCH REPORT

Application Number
EP 13 18 0179

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	US 2 724 211 A (LOUIS BLOOM) 22 November 1955 (1955-11-22) * column 3, line 3 - column 4, line 15; figures 1-3 * -----	1-3	INV. A63H27/00
X	US 2 739 414 A (CLEVELAND CHARLES H) 27 March 1956 (1956-03-27) * claims 1-4; figures 1,2 * -----	1-3	
X	US 5 853 312 A (LI DANNY H Y [HK]) 29 December 1998 (1998-12-29) * claims 1-3; figures 1-5b * -----	1-3	
			TECHNICAL FIELDS SEARCHED (IPC) A63H

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
Munich	20 June 2014	Shmonin, Vladimir

CATEGORY OF CITED DOCUMENTS

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20-06-2014

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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

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Patent documents cited in the description

- WO ZL201120240609 A **[0002]**