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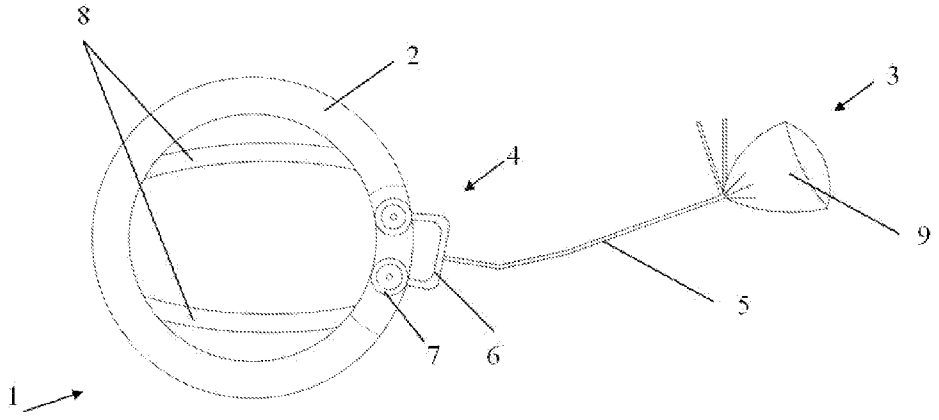

FIG. 1

(57) **Abstract:** The present invention relates to a health hoop comprising a ring, a weight device, and a guide device with an end being attached to the weight device and the other end being received within the ring, wherein the ring virtually remains stationary when the health hoop is used, and the weight device rotates about the ring while being guided by the guide device, wherein the weight device is attached to the guide device via a strap with an adjustable length. This health hoop of simple structure and easy manipulation can be used by different people to make individualized fitness plans, and can minimize the risk of injuring the muscles and joints of body parts to be exercised.

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Health Hoop

Technical Field

The present invention relates to an exercise equipment, and in particular to a health hoop comprising a ring which virtually remains stationary or only slightly gyrates in use and a weight device which swings around like a satellite orbiting a fixed track provided in the ring.

Background Art

With increasing stress in work and life, exercise becomes one of people's favorite stress relief tactics. Because of advantages such as simple in structure, less restriction on place, and convenient for use, the health hoop or hula-hoop becomes a popular personal exercise equipment.

The conventional hula-hoop on the market requires certain skills when one is hula-hooping, otherwise the hula-hoop cannot be smoothly rotated, which is particularly the case for beginners. In addition, the conventional hula-hoop has a fixed weight, so that exercise intensity cannot be increased or decreased according to user's needs. In order to meet various goals of different people, hula-hoops comprising a ring and an adjustable weight device that can rotate relative to the ring have been developed.

A Chinese utility model patent publication CN 202569283U discloses a hula-hoop comprising an outer ring with a C-shaped slot and an inner ring coaxially arranged in the slot of the outer ring, the inner ring being connected to a weight device that can rotate relative to the outer ring along with the inner ring. However, due to a complicated structure, this hula-hoop is difficult to be assembled, and the manufacturing cost is increased. Furthermore, the greater friction due to a large contact area between the inner and outer rings makes it laborious for a user to spin the hula-hoop.

Another Chinese utility model patent publication CN 202876198U discloses a health hoop comprising an annular ring and an adjustable centrifugal weight device which is directly received within a track provided in the ring so as to rotate around the

ring. However, because the center of gravity of the weight device is arranged close to the ring and has a substantially small range for adjustment, it is difficult for people with different exercise goals to carry out training plans of wide ranges. Additionally, it is inconvenient to adjust the weight because a rolling frame and a weight frame are integrated into one device, and the weight frame for receiving the weight is limited in size especially by taking account of the weight of the entire health hoop.

Therefore, a health hoop of simple structure and easy manipulation is needed for different people to make individualized fitness plans.

Summary of Invention

The present invention was made based on the above background and intends to provide a health hoop to achieve a simple structure and easy manipulation as well as a larger adjustable range of the center of gravity, thereby offering a wider range of exercise intensity to adapt to people with different exercise needs.

The present invention provides a health hoop comprising a ring, a weight device, and a guide device with an end being attached to the weight device and the other end being received within the ring, wherein the ring virtually remains stationary when the health hoop is used, and the weight device rotates about the ring while being guided by the guide device, wherein the weight device is attached to the guide device via a strap with an adjustable length.

Preferably, the ring is provided along an entire perimeter thereof with a continuous C-shaped slot which is opened radially outward to receive the guide device.

Preferably, the guide device comprises a U-shaped bracket and two rollers connected to ends of two legs of the U-shaped bracket, wherein the rollers are received for rolling in the slot of the ring, and the strap with an adjustable length is connected to a base of the U-shaped bracket.

Preferably, the weight device has a weight which can be increased or decreased depending on a user's desire and capability.

Preferably, the ring is provided with one or two ergonomic handles for a user to grip.

Preferably, the ring is provided with radially inward extending lugs, to which a body part to be exercised can be connected via connecting means.

Preferably, the connecting means comprises connecting strips connected to the lugs and an attachment adapted to the body part.

Preferably, the ring is made of metal, or carbon fibers, or plastics.

Preferably, the ring is integrally formed, or is designed to be detachable and to enable a size adjustment and a position locking by adjusting and locking means.

Preferably, the weight device can rotate about the ring manually by person or automatically by electric power.

The health hoop according to the present invention has the following advantages: since the weight rotates about the ring in a distance therefrom, the center of gravity can be adjusted in a greater range, such that exercise intensity of a greater range can be obtained to adapt to various exercise needs of different people; since the guiding part and the weight are not integrated into a single device, it is possible to simplify the adjustment of the weight and to allow the guide device and the weight device to be designed flexibly and independent from each other; moreover, it is possible to minimize the risk of injuring the muscles and joints of body parts (e.g., waist, neck, hip, knee and ankle) to be exercised.

Brief Description of Drawings

The above and other features and advantages of the present invention will become easier to be understood by illustration of the drawings below. It should be understood that the drawings are only exemplary and are not drawn to scale, and therefore should not be taken as limiting to the present invention.

FIG. 1 schematically shows a first embodiment of the health hoop of the present invention, with the ring material being partially removed to clearly show a guide device received in the ring;

FIG. 2 schematically shows a second embodiment of the health hoop of the present invention, different from the first embodiment in that a single handle is provided for a user to grip;

FIG. 3 schematically shows connection between different body parts (including waist, knee and ankle) and the ring, wherein the guide device and the weight device are not shown for clear and concise illustration; and

FIG. 4 schematically shows an attachment attached to a waist of a body and a connecting strip extending from the attachment.

Detailed Description of Embodiments

The present invention will be described in detail below with reference to the drawings and specific embodiments.

The invention provides a novel health hoop, which performs circular motion similar to a traditional hula-hoop to exercise or train the muscles and joints of shoulders, elbows, knees and ankles. However, distinct from the traditional hula-hoop, the health hoop of the present invention has a centrifugal weight performing orbital spinning around the ring. That is, when the health hoop is in use, the ring virtually stays in place (or remains stationary), and the weight device (e.g. weight bag) attached to the ring revolves around a fixed track in the ring like a satellite, thereby exercising the muscle and joints of the user's body, arms and legs.

FIG. 1 shows a first embodiment of the health hoop according to the present invention. The health hoop 1 comprises a ring 2, a weight device 3 (e.g. a weight bag 9 as shown in the drawing) and a guide device 4 with an end being attached to the weight device 3 and the other end being received within the ring 2. As shown in FIG. 1, part of the material of the ring 2 is removed to show the guide device 4 received in the ring 2. The guide device 4 comprises a U-shaped bracket 6 and two rollers (e.g., roller wheels 7 as shown in the drawing) connected to ends of two legs of the U-shaped bracket 6. The ring 2 is hollow, with a continuous C-shaped slot opened radially outward around an entire perimeter of the ring. The roller wheels 7 of the guide device 4 are received in the slot and arranged to rotate freely along the slot. The U-shaped bracket 6, more specifically a base thereof, is connected to the weight bag 9 in a distance by a strap 5 with an adjustable length. Because the length of the strap 5 is adjustable and the weight of the weight bag 9 can be increased or decreased depending on a user's desire and capability, a position of the center of gravity can be adjusted to further adjust training or exercise intensity in a wide range, such that it is

possible to adapt to various exercise needs of different people, even to design different physical plans intended for different treatment purposes of different patients.

The ring 2 of the health hoop 1 shown in FIG. 1 is provided with two handles 8 for a user to grip. For example, when the health hoop is used to exercise the muscles or joints of the shoulders, neck and so on, the user only needs to grip the handles 8 with both hands and lift the ring 2 over the head and swing body slightly such that the weight bag 9 attached to the base of the U-shaped bracket 6 by means of the strap 5 rotates in a clockwise or counterclockwise direction around an orbital slot in the ring 2 via two roller wheels 7. It should be noted that the ring 2 itself does not rotate but is only made to gyrate during the use of the health hoop 1, with only the weight bag 9 spinning around the ring 2.

It should be understood that except for rotating about the ring 2 manually as illustrated above, the weight device 3 can rotate automatically about the ring 2 by electric power. In addition, although the ring 2 is generally in a circular shape just as shown in the drawings, it may be envisaged to have a rectangular or square shape or other shapes, because difference shapes will create different motions to train different parts of a body.

The ring 2 of the health hoop 1 in FIG. 2 is only provided with one handle 8, which is adapt to a health hoop of small size with the weight device being rotated with a single hand. This health hoop is usually used to exercise shoulders, elbows and etc..

For the health hoop according to the present invention as shown in FIGS. 1 and 2, the ring 2 can be made of various suitable materials known in prior art, e.g., metal (such as aluminum alloy), carbon fibers, plastics and so on, to achieve optimal material rigidity, strength and lightweight. Besides, the outer diameter of the ring 2 preferably ranges from 12 inches to 24 inches, or may be in other size according to specific requirements. The health hoop with the C-shaped slot may be integrally formed, or may be detachable. For example, the ring 2 can be designed to be formed by multiple sections which can be locked by locking means, such as nut-bolt locking means used in a telescopic adjustable cane, to adjust the size and lock the position of the ring and to disassemble the sections by releasing the locking means. As such, the user can take the hoops apart for easy transport.

As shown in FIGS. 1 and 2, the weight device 3 is in the form of a weight bag 9,

the weight of which can be increased or decreased according to the user's desire and capability. The weight device may be a weight bag, a water bottle or other weights. Besides, the strap 5 connected to the U-shaped bracket 6 and the weight bag 9 can be adjusted as needed to obtain exercise intensity desired by the user.

The U-shaped bracket 6 serving as the guide device 4 includes two legs and a base, wherein two roller wheels 7 are attached to the ends of the legs. Of course, rollers of other forms with the same function, e.g. balls, can be used. The weight bag 9 is pulled by the strap 5 to rotate with the U-shaped bracket 6 around the ring 2, while the roller wheels 7 is rotating about the slot in the ring 2.

According to a specific embodiment in the present invention, preferably four lugs (not shown) may be arranged radially inward of the ring. In this case, the body part through the ring 2 of the health hoop shown in FIGS. 3 and 4 can be connected to the lugs via particular connecting means 10 to effect the connection between the body part and the ring 2. As shown in FIG. 3, the waist, knees and ankles of the body can be connected to the ring 2 via the connecting means 10 which may include a corresponding number of connecting strips 11 connected to the lugs and an attachment adapted to the body part to be exercised. The attachment may be similar to a waist support, a kneelet or an ankle guard and the like. The connecting strips 11 extending from the attachment 12 are directly connected to the lugs. For ease of wearing, the attachment 12 adapted to the body part (e.g. waist) may be deployable and locked by a buckle or Velcro 13 as illustrated in FIG. 4.

The health hoop 1 according to the present invention allows circular motions and is mainly intended to exercise joints of shoulders and knees. These joints are called synovial joints (also known as diathrosis). There are many types of synovial joints in the body, including gliding, hinge, saddle, and ball-and-socket joints.

The health hoop 1 according to the present invention can be used by athletes from various fields, because it is particularly designed to strengthen and prevent damage to the neck, shoulder, hip, knees and ankle muscles and joints that are subject to extreme stresses and most prone to injury. In addition, it can be used by medical centers to make recovery plans for different patients.

It should be noted that the above embodiments are only exemplary and shall not be taken as limiting to this invention. Various modifications and variants may be made

by those skilled in the art based on the description, without departing from the scope or spirit of the present invention. The true scope of the invention is defined by the annexed claims and equivalents thereof.

Claims

1. A health hoop, comprising a ring, a weight device, and a guide device with an end being attached to the weight device and the other end being received within the ring, characterized in that the ring virtually remains stationary when the health hoop is used, and the weight device rotates about the ring while being guided by the guide device, wherein the weight device is attached to the guide device via a strap with an adjustable length.

2. A health hoop according to claim 1, characterized in that the ring is provided along an entire perimeter thereof with a continuous C-shaped slot which is opened radially outward to receive the guide device.

3. A health hoop according to claim 2, characterized in that the guide device comprises a U-shaped bracket and two rollers connected to ends of two legs of the U-shaped bracket, wherein the rollers are received for rolling in the slot of the ring, and the strap with an adjustable length is connected to a base of the U-shaped bracket.

4. A health hoop according to any one of claims 1 to 3, characterized in that the weight device has a weight which can be increased or decreased depending on a user's desire and capability.

5. A health hoop according to any one of claims 1 to 3, characterized in that the ring is provided with one or two ergonomic handles for a user to grip.

6. A health hoop according to any one of claims 1 to 3, characterized in that the ring is provided with radially inward extending lugs, to which a body part to be exercised can be connected via connecting means.

7. A health hoop according to claim 6, characterized by further comprising connecting strips connected to the lugs and an attachment adapted to the body part.

8. A health hoop according to any one of claims 1 to 3, characterized in that the ring is made of metal, carbon fibers, or plastics.

9. A health hoop according to any one of claims 1 to 3, characterized in that the ring is integrally formed, or is designed to be detachable and to enable a size adjustment and a position locking by adjusting and locking means.

10. A health hoop according to any one of claims 1 to 3, characterized in that the

weight device can rotate about the ring manually by person or automatically by electric power.

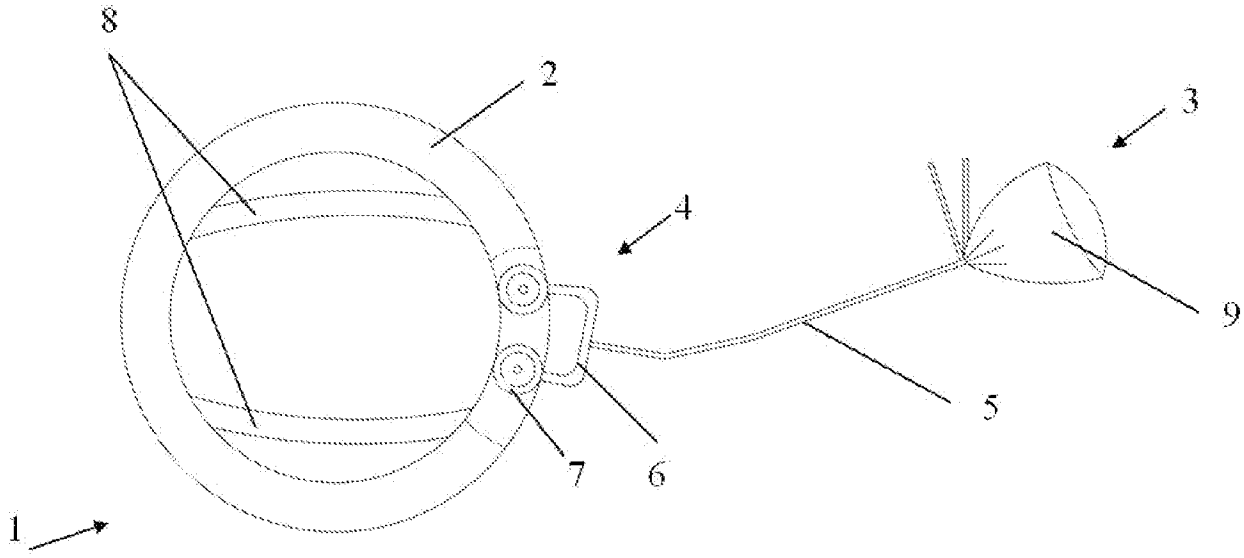

FIG. 1

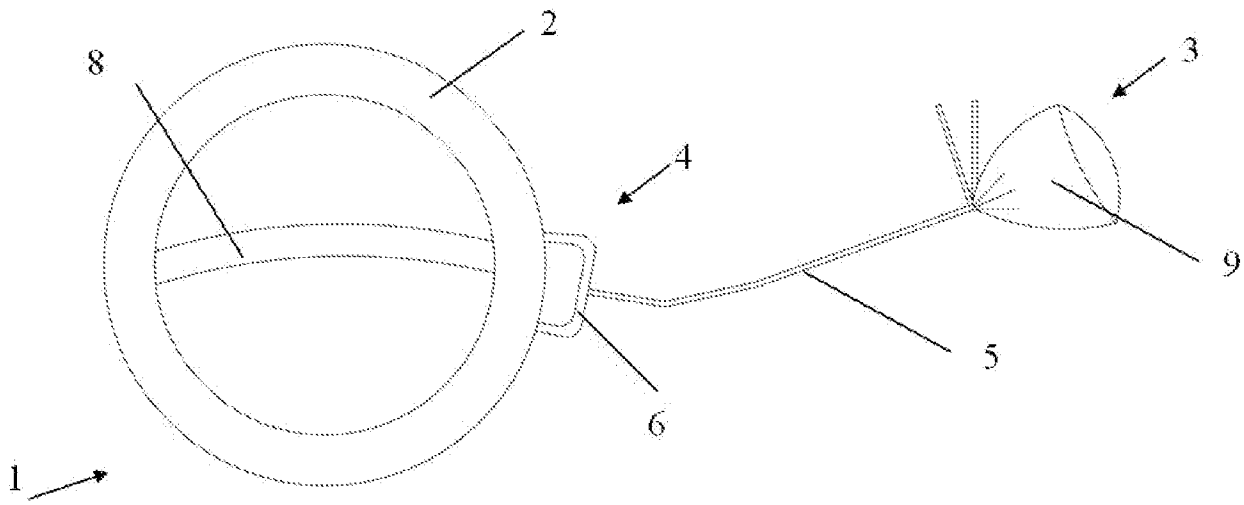

FIG. 2

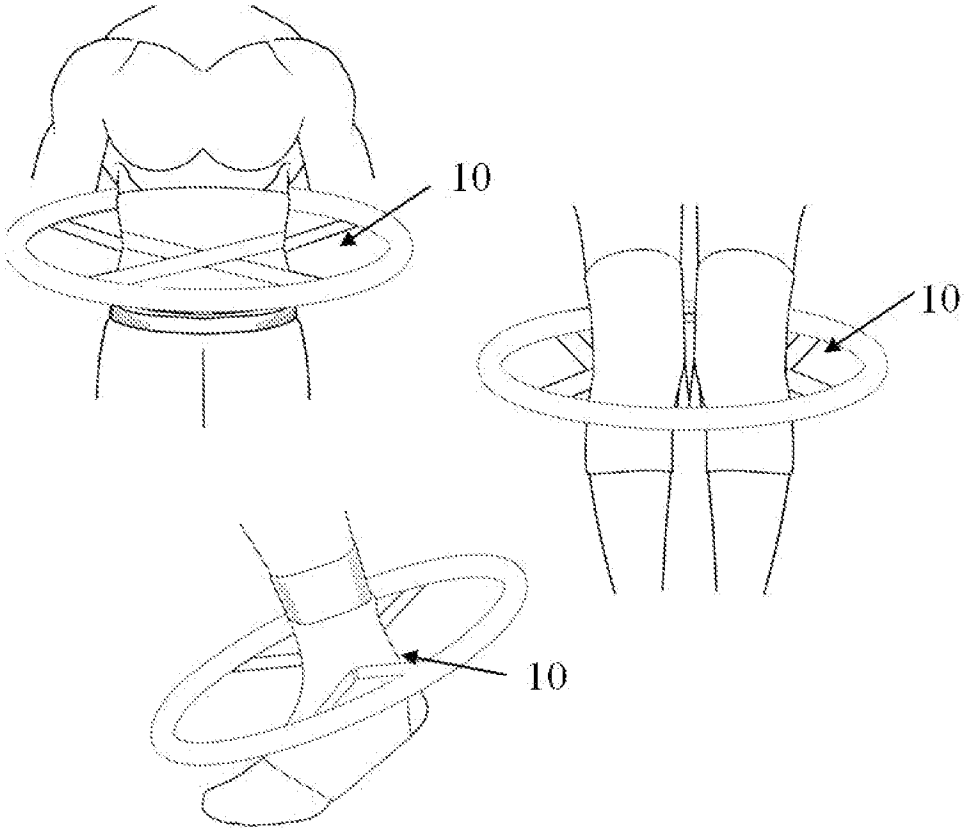

FIG. 3

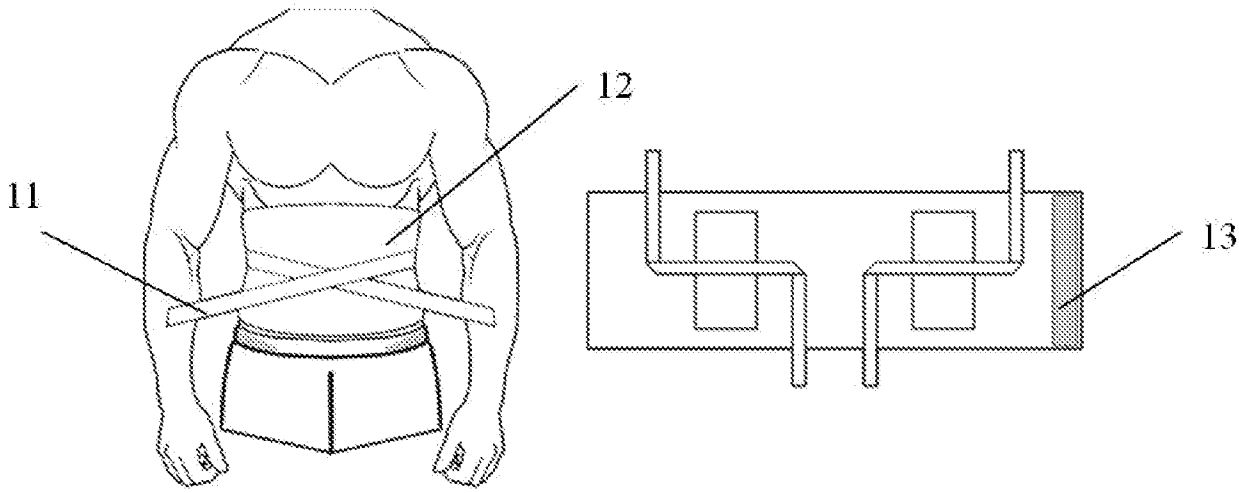

FIG. 4

INTERNATIONAL SEARCH REPORT

International application No.
PCT/CN2019/096818

A. CLASSIFICATION OF SUBJECT MATTER

A63B 19/02(2006.01)i

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

A63B 19/-; A63B 21/22

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

VEN;CNABS;CNKI:HULA, weight, rotat+, loop, ring, adjust, length+

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 9412242 A1 (CHUNG YOUNG BOK) 09 June 1994 (1994-06-09) claims 1, 8, page 4, line 13 to page 5, line 8, page 5, lines 21-26, page 7, lines 19, 20 and figs. 1, 2- 6, 7, 9, 11, 12 and 15	1-10
X	US 9687688 B2 (HSIAO LIANG LANG) 27 June 2017 (2017-06-27) claims 1, 4 and figs. 1, 2	1-5, 8-10
PX	CN 208710908 U (GUPILANSALVADOR CAMINO, SR.) 09 April 2019 (2019-04-09) claims 1-10	1-10
A	CN 107854802 A (XINCHANG YINGQI AUTOMATION EQUIPMENT CO LTD) 30 March 2018 (2018-03-30) the whole document	1-10
A	CN 1814328 A (CHEN KUNYUE) 09 August 2006 (2006-08-09) the whole document	1-10
A	KR 20110093356 A (AHN JOONG KIL) 18 August 2011 (2011-08-18) the whole document	1-10
A	US 2014342882 A1 (HUANG CHENG-YUET AL.) 20 November 2014 (2014-11-20) the whole document	1-10

☐ Further documents are listed in the continuation of Box C. ☑ See patent family annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

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"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

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"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
08 October 2019	**16 October 2019**
Name and mailing address of the ISA/CN **National Intellectual Property Administration, PRC** **6, Xitucheng Rd., Jimen Bridge, Haidian District, Beijing 100088** **China** Facsimile No. **(86-10)62019451**	Authorized officer **LU,Shijie** Telephone No. **62084988**

INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.
PCT/CN2019/096818

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CN 107854802 A	30 March 2018	None	
CN 1814328 A	09 August 2006	None	
KR 20110093356 A	18 August 2011	None	
US 2014342882 A1	20 November 2014	None	