(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
19 April 2007 (19.04.2007)

PCT

(10) International Publication Number
WO 2007/043825 A1

(51) International Patent Classification:
A47C 7/14 (2006.01)

(21) International Application Number:
PCT/KR2006/004121

(22) International Filing Date: 13 October 2006 (13.10.2006)

(25) Filing Language: Korean

(26) Publication Language: English

(30) Priority Data:
10-2005-0096931 14 October 2005 (14.10.2005) KR

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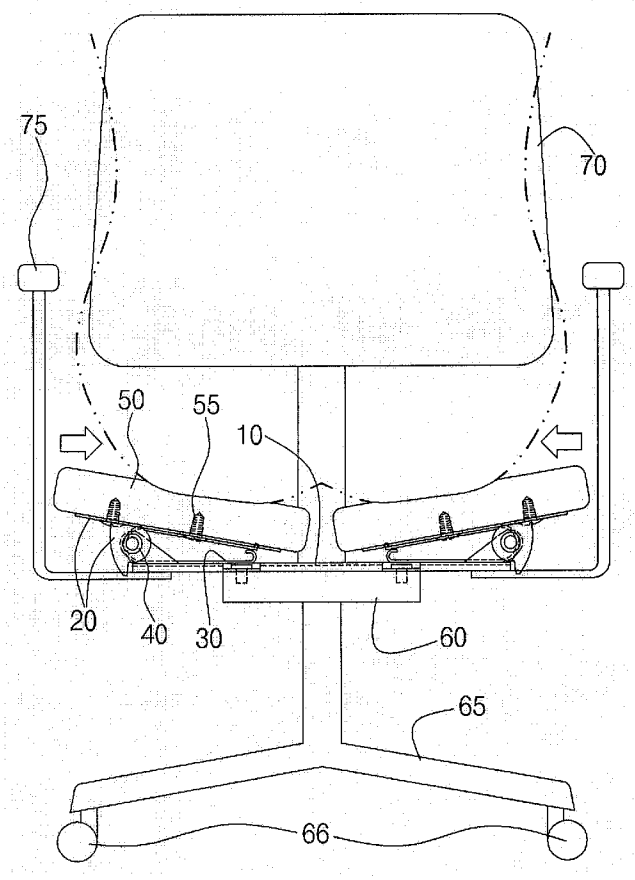
(81) Designated States *(unless otherwise indicated, for every kind of national protection available)*: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KZ, LA, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, SV, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(84) Designated States *(unless otherwise indicated, for every kind of regional protection available)*: ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:
— *with international search report*

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: PELVIS PROTECTING CHAIR



(57) Abstract: This invention relates to a pelvis protecting chair composed with elastic seats. This invention is composed of a base(10) mounted on a stationary part(60) with a castor(66) mounted stand(65), at least one set of seat supports(20) hinged to the base, a spring(30) elastically connecting the base(10) and the seat support(20), seats(50) mounted to the seat supports(20), and armrests(75) and a backboard(70) mounted to the base(10).

WO 2007/043825 A1

【Description】

【Invention Title】

PELVIS PROTECTING CHAIR

【Technical Field】

The present invention relates to a pelvis protecting chair. More specifically, it is about comprising the seat which is in contact with the user's pelvis with elastic materials so that it should protect the pelvis.

【Background Art】

Generally, human spine is formed with the cervical vertebrae, the thoracic vertebrae, and the lumbar. The coccyx, located at the end of the lumbar, can be the origin of pain due to overwork or sedentariness, and this pain is called coccygodinia.

Specifically, coccygodinia is a disease which brings pain when the coccyx, located behind the anus, moves and the coccyx individually is not the cause of the disease. The disease occurs twice more to women than to men, and it is usually diagnosed to factory workers or secretaries.

Falling on the backside on a snowy day, or hobbies or work which consistently gives impact to the coccyx, for example, horse riding, or obstetric history such as parturition, and dystocia, or diseases like spinal arthritis can be

the causes of coccygodinia. It is known that patients of coccygodinia feel pain when the muscles connected to their coccyx goes through contraction or relaxation.

Skeletal muscle relaxants can be used for treating this disease, if this treatment does not bring any progress, local anesthetize or injecting steroids can help to bring relaxation to the muscles connected to the coccyx. The patient should work out the muscles at his lower back, and he should also fix his wrong posture.

For rare cases, when reliable lesions are discovered through radioactive inspections, surgeries cutting out the coccyx are performed.

So that unless the cause of pain in the coccyx is so definite which can lead to a absolute cure, the relapse of coccyxodinia can result as a serious nuisance to the patient.

For other diseases, hemorrhoids is a varix in the rectum and the anus, in other words, it is the expanded vain of the anus and lower rectum.

Hemorrhoids can be classified as internal hemorrhoids and external hemorrhoids develops around the anus and is surrounded with very sensitive tissues, and if thrombus develops, extreme bloat erupts with severe pain. It can be detected as a hard lump and when it is ruptures, it bleeds.

Internal hemorrhoids shows symptoms as painless bleeding and projection during the action of the bowels beneath the pectinate line. But even internal hemorrhoid can bring severe pain when a full extrication (extrication at the anus when it does not go back in the anus when pushed) occurs.

Therefore, even hemorrhoid patients can not sit down in a chair for a long time because of the severe pain, and feel pain undergoing normal life.

But, comfortable chairs for patients of coccyxodinia or hemorrhoids who fail pain in their nates area are not developed so that these patients feel difficulty during everyday life.

To relief this problem, there is the "Chairs with divided seats", which was registered by the applicant of this invention as Korean Utility Model Reg. No. 20-0260631.

The conception of Korean Utility Model Reg. No. 20-0260631 is to manually adjust the space between the two seats, using a set of linkages mounted under the chair.

But the prior chairs that were invented with this mechanism shows some inconveniences. The user should stand up and unlock the stationary state and then pull or push the other seat to adjust the space between the seats and then lock the stationary state. Along with this, the space between the sheets can be

adjusted to settled spaces which can not provide minute adjustment.

And for most cases, the chair is used by a single user so that once the space between the seats, there is no necessary to adjust it again, which leads to the increase of the manufacturing cost.

And the instillation of the space control linkage leads to growth of weight, which can lead to inconveniency for handling.

【Disclosure】

【Technical Problem】

Thus, this invention contrives from the described problems that has a purpose of developing a coccyx protecting chair, which considers the users physical status and can adjust the space between a set of seats to a certain amount, and allow vertical adjustments of the seats.

Another object of this invention is to simplify the frame of the chair which improves the manufacturing.

【Technical Solution】

To reach theses purposes, this invention has at least one set of base hinges mounted symmetrically on the upper base plate, a base mounted on the stationary part securing the default height of the chair, at least a single seat support which is hinged to the aforementioned base, a spring which is mounted

between the aforementioned base and the seat base to sustain the resilient between the two bases, and a pair of seats corresponding to the two seat bases.

The support hinge of the seat support is mounted on the side of the aforementioned base to behave as a stopper which sustains the seat support at a uniform angle.

The aforementioned spring is a leaf spring which has one end of the spring mounted to the topside of the base, and the other end which is upper curved so that it can absorb the compression from extreme stress, mounted to the bottom side of the seat support.

The leaf bottom side of the spring is fixed to the seat support.

The base, or the stationary part has a set of armset connected to the lower part of it, and it also has a backboard attached to it.

The stationary part also includes a height adjustment linkage, and a caster for making the vertical movement possible.

【Advantageous Effects】

The invention prevents widening of the pelvis for users who are in a sedentary position for long times, and reduces the pressure on the coccyx so that the pain to the coccyx can be relieved, and provides convenience to patients of anal diseases.

This invention also increases productivity due to its relatively simple design.

【Description of Drawings】

Fig. 1 is the structural front view of the Pelvis Protecting Chair.

Fig. 2 is the descriptive front view of the Pelvis Protecting Chair.

Fig. 3 is the structural plane view(A) and the side view(B) of the seat.

Fig. 4 is the structural front view of the seat.

Fig. 5 is the descriptive plane view(A), side view(B), front view(C) of the base of the seat.

Fig. 6 is the structural plane view(A), side view(B), front view(C) of the base of the seat.

Fig. 7 is the structural plane view(A), side view(B), front view(C) of the leaf spring.

Fig. 8 is the disassembly figure of the components which constructs the main part of the Pelvis Protecting Chair.

【Best Mode】

The prescribed invention is precisely described with reference to the appended diagrams.

As shown in Fig. 1 and Fig. 8, the Pelvis Protecting Chair is consists of a

base(10) mounted on a stationary part(65) which has a caster(66) mounted on a stand(65), two seat supports(20) hinged to the base, a leaf spring(30) to provide elasticity between the seat and the base, seats(50) mounted on the seat supports(20), and two armrests(75) and a backboard which are both connected to the base(10).

As described in Fig. 5, there are two symmetrically mounted hinges on the base(10), and the hinges have the first hinge connecting hole(13a) each.

In the center of the base(10), there is a connecting part(11a), and there is a screw hole(11b) to connect with the stationary part(60) in the connecting part(11a)

The connecting part(11a) is used as the gap for bolt which goes through the screw hole(11b), and the curved end(35) of the leaf spring(30) insures the space for lowering the seat.

The base plate(11) is a 2mm thick steel plate for light weight, and for rigidity, the edge of the plate is tilted toward the down side. It is pressed so that the center of the plate is projected in the horizontal direction(in the direction of the hinges(13)).

The seat support(20) is connected with the base(10) with 4 hinges(13).

As described in Fig. 6, the support hinge(23) connected to the base

hinge(13), is formed downward, and there is the seat instillation(21) mounted on the seat(50).

The first stage of the seat instillation(21), which is the stationary stage(34) at the upper end of the leaf spring, and it is connected to the spring instillation(21a). And there is a connecting hole(21b) for connecting the seat(50).

The supporting hinge(23) has the second connecting hole(23a) which corresponds to the first connecting hole(13a) of the base hinge(13), and there is a stopper(23b) on the edge side of the base(10).

As described in Fig. 7, the spring(30) consists a curved mid section(33) at the point where the seat support(20) hinge is linked, and centering around the mid section(33), the upper part(32) which is in contact to seat support(20), and the stationary stage(34) which is connected to the upper curved spring of the seat support(20) is positioned. And centering the mid section(33) the lower stage(31) connected to the upper part of the base(10), and the curved section(35) which is tilted upward is symmetrically positioned. This curved section(35) absorbs the impact from extreme weight acting downward.

The main components of seat according to this invention are connected as shown in Fig. 3 and Fig. 4. The seat support hinge(23) of the seat support(20) is connected to the base hinge(13) of the base(10), and the hinge bolt(40) is

used to connect the hinges.

Before connecting the hinge bolt(40), the spring(30) should be compressed to be set up between the base(10) and the seat support(20), and then the hinge bolt(40) should be tightened.

And the seat(50) should be fixed to the seat support(20) with the seat bolt(55)

As described in Fig. 1, in this invention, the stationary part(60) connected to the stand(65) can be connected to the base(10) and the base can also be connected to the stationary part(60), and the armrests(75), and the backboard(70), when necessary.

When assembled as above, the space between the seat support(20) and the base(10) sustains a certain amount of distance due to the tension of the leaf spring(30) which results to a parallel state. The repulsion of the spring(30) prevents the seat support(20) from being unparallel and moving up, by making one side of the stopper(23b) at the hinge(23) to be in contact with the side of the base(10).

And as shown in Fig. 2, when the user sits on the seat(50), the force from the users weight described as the 2 dotted chain line moves through the seat downward, centering the base hinge(13), and the support hinge(23), so that

force that pushes from both sides of the pelvis acts toward the center(the arrow in Fig. 2) to protect the users pelvis.

【Industrial Applicability】

This invention prevents the pelvis of the patient from becoming wider, and relieves the pressure of the coccyx to constraint the pain, and provides convenience to patients with anal diseases.

【CLAIMS】

【Claim 1】

A pelvis protecting chair comprising:

a base having at least one set of base hinges symmetrically located on both sides of the top of a base plate, and mounted on a stationary part at a predetermined height;

at least one set of seat supports with hinges mounted under side thereof and hinged to the base hinge;

a spring installed at a connecting point of the seat support hinge for elastically sustaining the seat support; and

at least one set of seats corresponding to the seat support;

【Claim 2】

The pelvis protecting chair according to claim 1, wherein the seat support hinge of the seat support has a stopper which is in contact with a side of the base for sustaining the seat support in a certain angle.

【Claim 3】

The pelvis protecting chair according to claim 1, wherein the spring is a leaf spring, one side of which is connected to the upper side of the base, and the other side of which is connected to the lower side of the seat support.

【Claim 4】

The pelvis protecting chair according to claim 3, wherein the end portion of the base side of the leaf spring is curved in an upward direction.

【Claim 5】

The pelvis protecting chair according to claim 3, wherein the end portion of the seat support side of the leaf spring is fixed at the seat support.

【Claim 6】

The pelvis protecting chair according to claim 1, further comprising a set of armrests connected to the both sides of the lower part of the base or the stationary part.

【Claim 7】

The pelvis protecting chair according to claim 1, further comprising a backboard connected to rear side of the lower part of the base or the stationary part.

【Claim 8】

The pelvis protecting chair according to claim 1, wherein the stationary part has a height controlling section and a movement allowing caster.

【Claim 9】

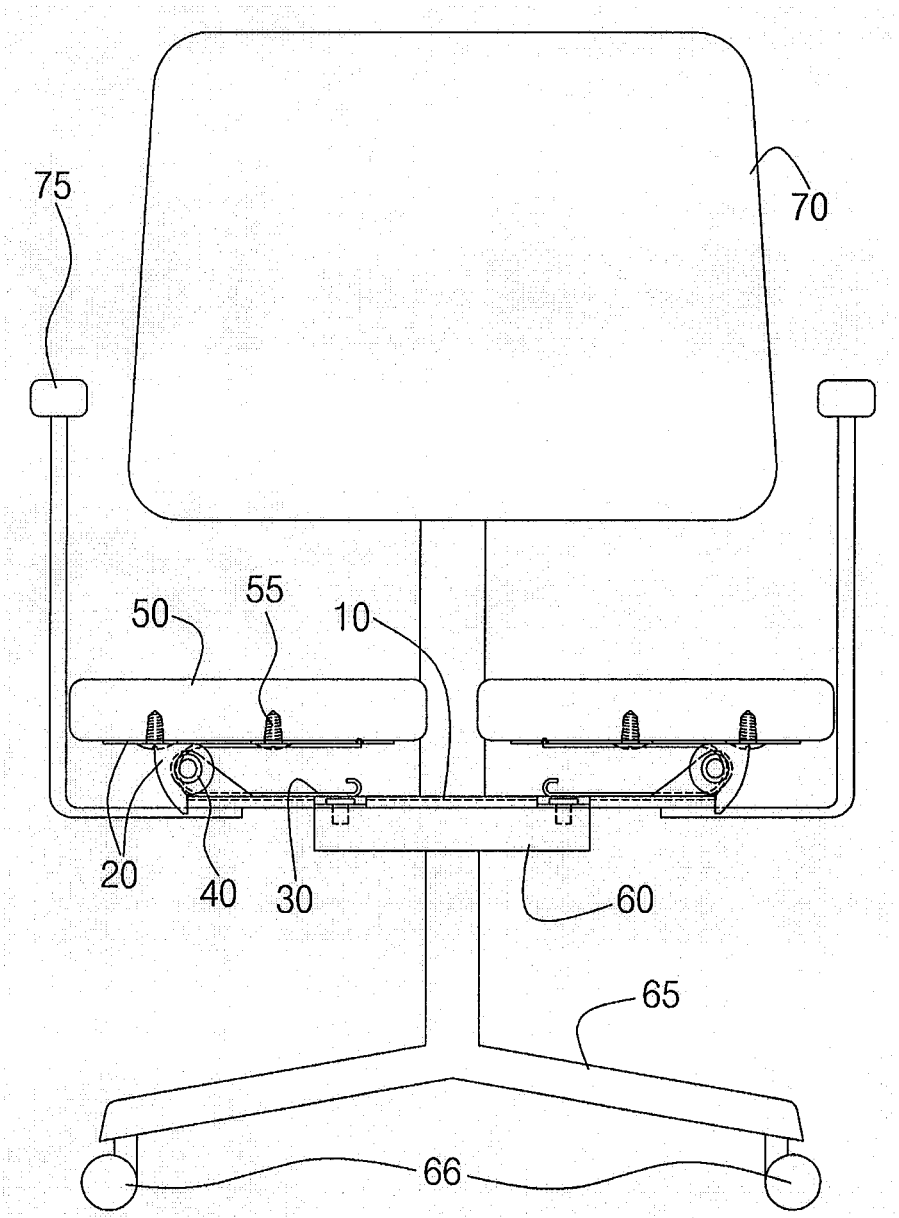
The pelvis protecting chair according to claim 1, further comprising a

connecting section at the base for connecting the stationary part, and which is positioned lower than the base plate.

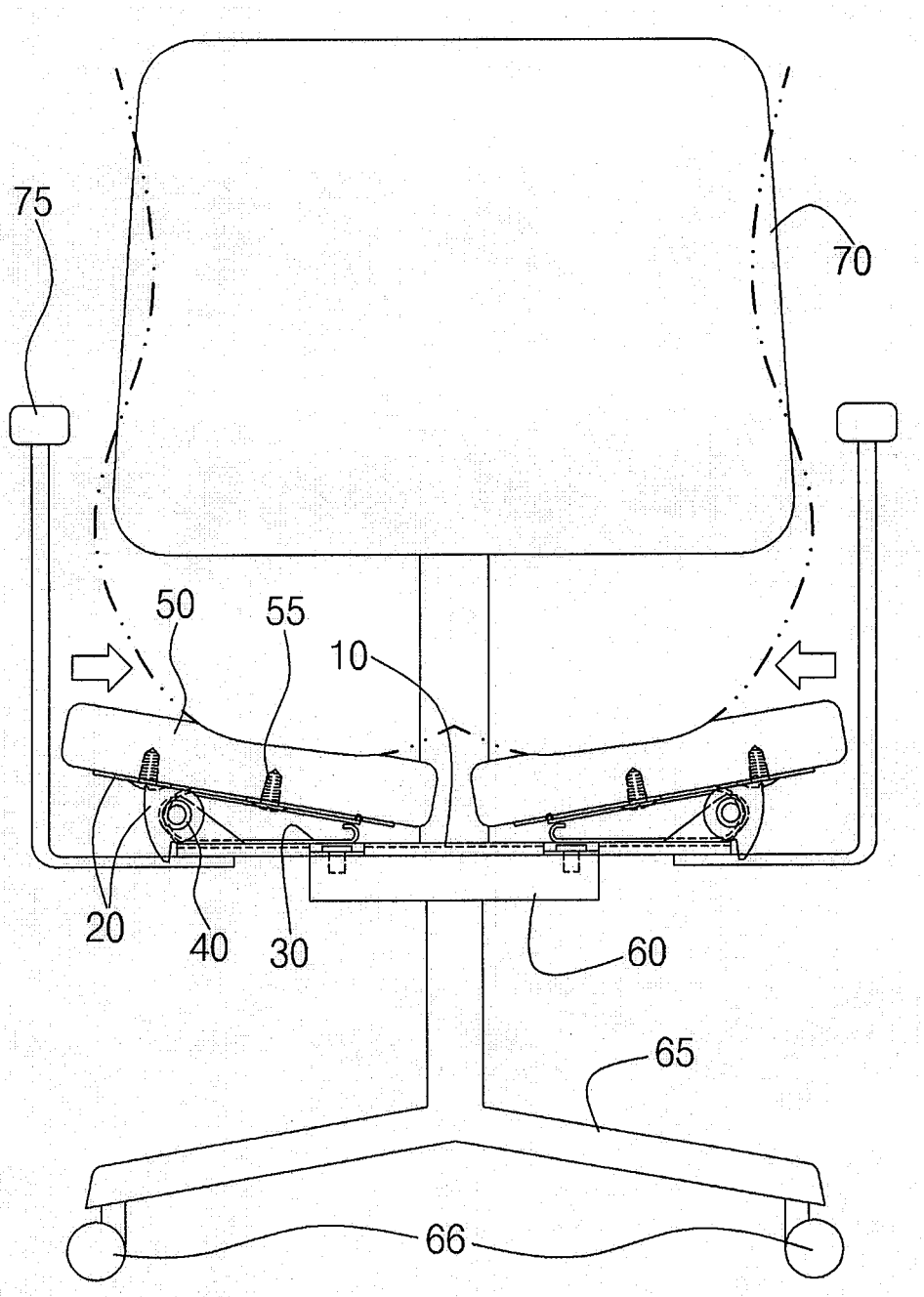
【Claim 10】

The pelvis protecting chair according to claim 1, wherein the base hinges and seat supports are 3 sets, respectively.

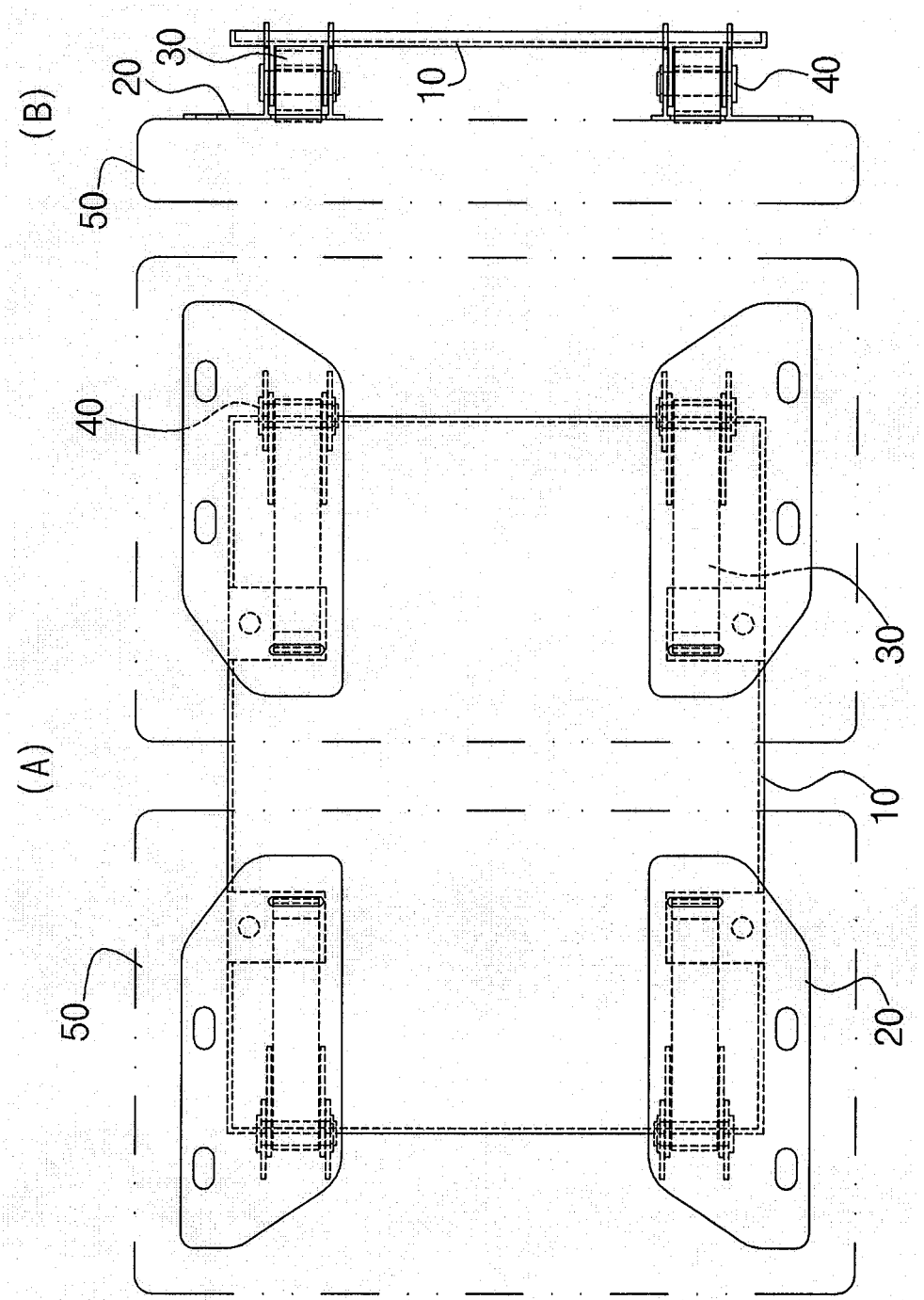
【Figure 1】



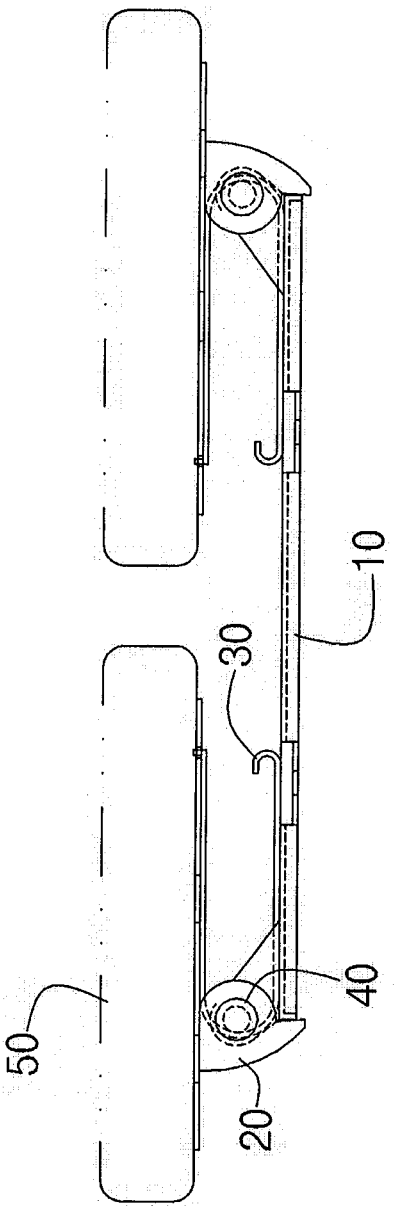
【Figure 2】



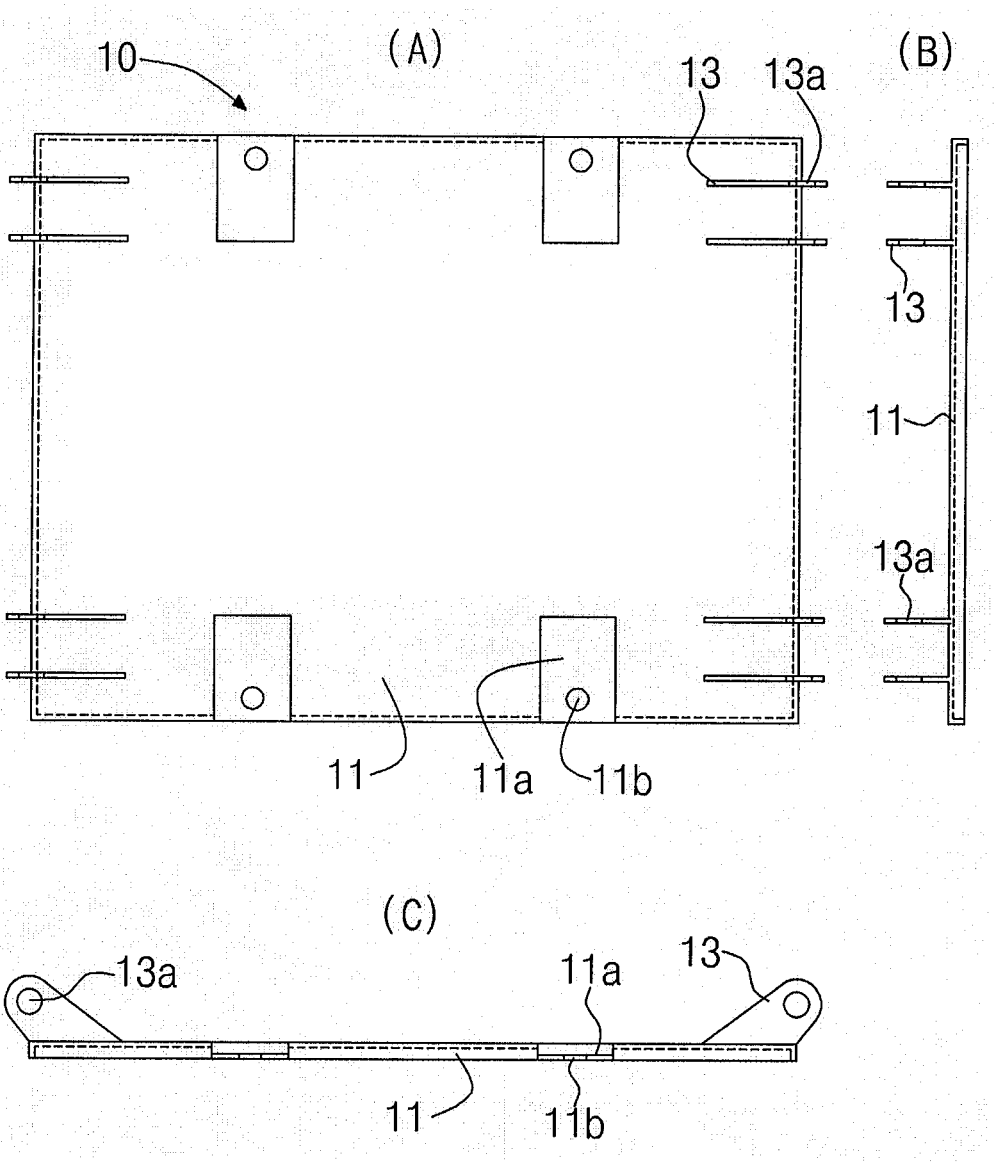
【Figure 3】



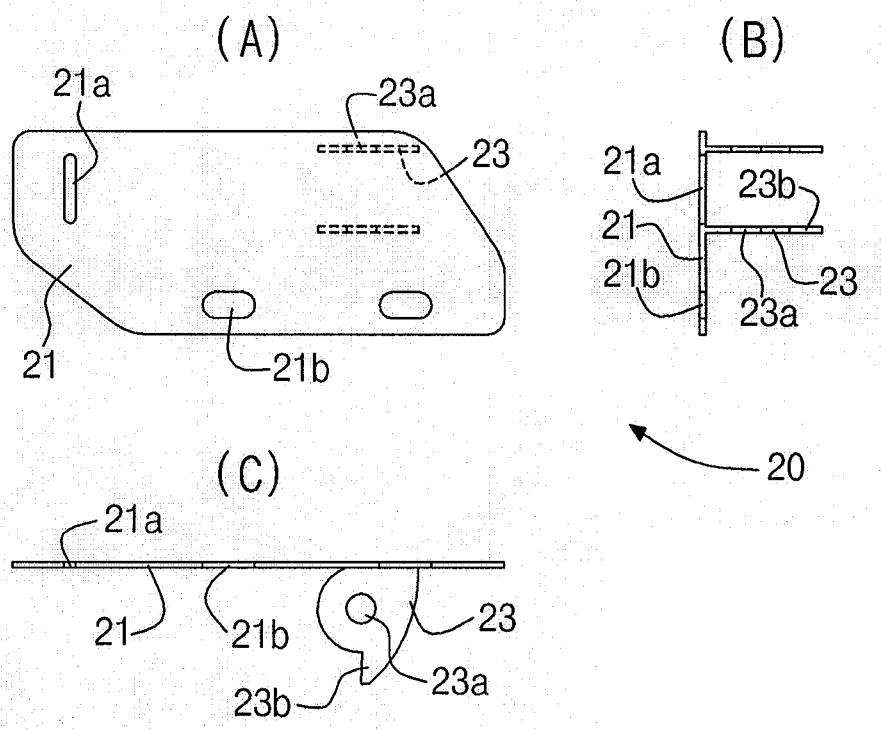
【Figure 4】



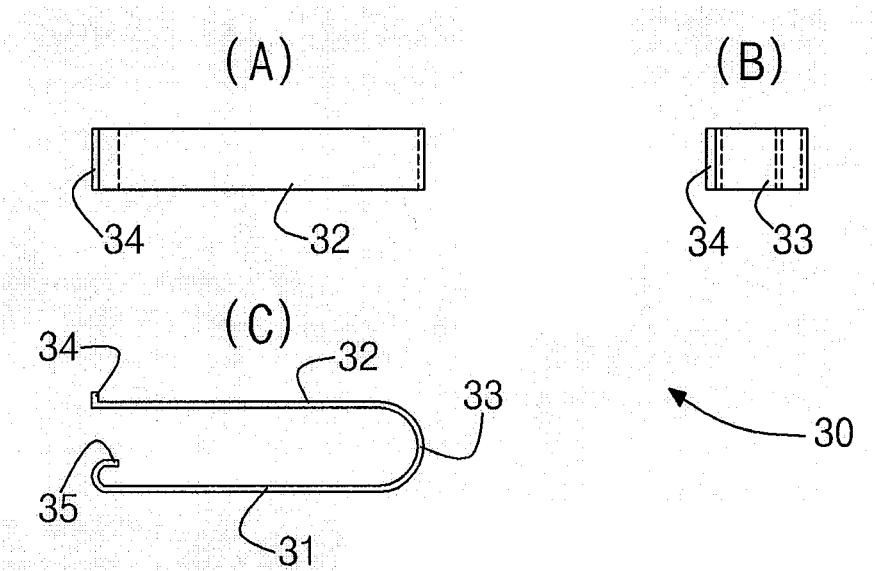
【Figure 5】



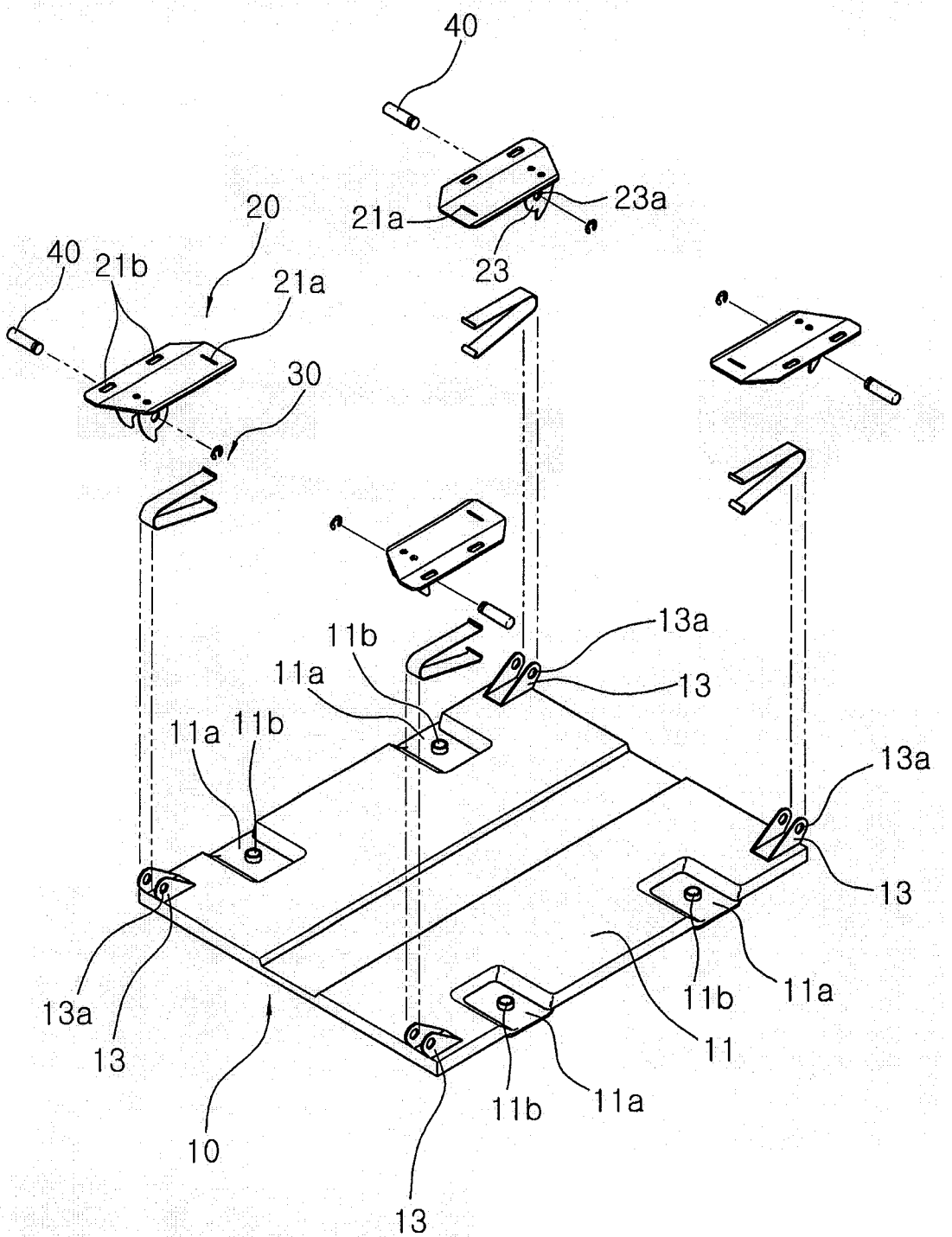
【Figure 6】



【Figure 7】



【Figure 8】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21a
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INTERNATIONAL SEARCH REPORT

International application No.
PCT/KR2006/004121

A. CLASSIFICATION OF SUBJECT MATTER

A47C 7/14(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)

IPC 8 A47C

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

KR, JP : IPC as above

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

eKIPASS (KIPO internal) & keywords: seat, hinge, spring, chair

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	EP 1026975 B1 (DUEL SEAT TECHNOLOGIES, INC.) 17 August 2005 See page 3, column 4, lines 34-45, page 4, column 5, lines 7-12, and Figs. 3 and 12.	1
A	JP 10151033 A (FUKUNAKA, MIKIO) 09 June 1998 See abstract, page 2, column 2, lines 9-26, and Fig. 1.	1
A	WO 03034870 A1(KIM, SUNHWAN) 01 May 2003 See abstract, and Fig. 1.	1

☐ Further documents are listed in the continuation of Box C.

☒ See patent family annex.

* Special categories of cited documents:

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"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
16 JANUARY 2007 (16.01.2007)	**16 JANUARY 2007 (16.01.2007)**

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INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.
PCT/KR2006/004121

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
EP1026975B1	17.08.2005	EP01026975A1 EP1026975A4	16.08.2000 07.02.2001
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