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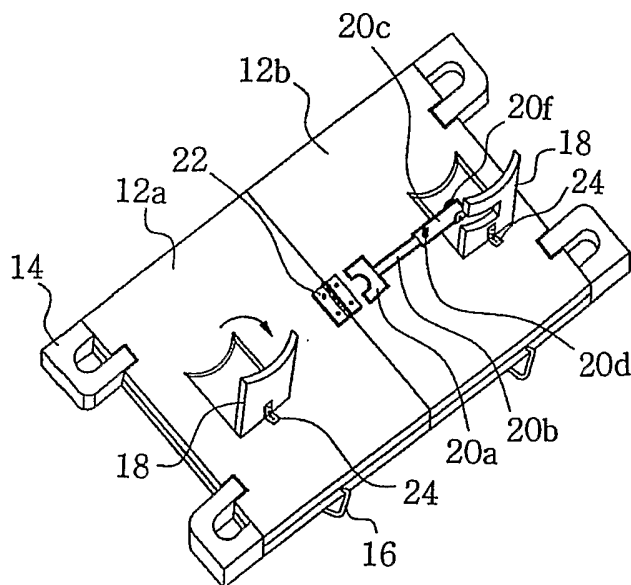
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(54) Title: SUPPORT IMPLEMENT HANGING ON STEERING WHEEL



(57) Abstract: A support implement is provided, which can be used as a support table while being hung on a vehicle steering wheel, in order to make a user read a book or put articles thereon. The support implement hanging on a steering wheel includes hangers which can easily hang the support implement on the steering wheel, and two fixing legs and one horizontal fixing leg which are formed in the rear surface of the support implement so as to make the support implement fixed on the steering wheel more firmly. Accordingly, the support implement can be used as a support table where foodstuff such as drinking water can be put thereon as well as a reading table enabling a user to read a book thereon.



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.

SUPPORT IMPLEMENT HANGING ON STEERING WHEEL

Technical Field

The present invention relates to a support implement hanging
5 on a steering wheel, and more particularly to, a support implement
hanging on a steering wheel, which can be used as a support table
where foodstuff such as drinking water can be put thereon as well
as a reading desk enabling a user to read a book thereon.

Background Art

At present, automobile cars are not luxuries but essentials.
Thus, people spend much time in automobile cars. However, when
people read books or eat foodstuffs in automobile cars, they read
books inconveniently taking hold of the books with a hand or hands
15 or inconveniently eat foodstuffs grasped by a hand or hands, since
a reading desk or a support table for use in an automobile car
do not exist.

Disclosure of the Invention

20 To solve the above problems, it is an object of the present
invention to provide a support implement which can be used as
a reading desk or a foodstuff support table that anyone can use
conveniently in an automobile car.

To accomplish the above object of the present invention,

according to the present invention, there is provided a support implement hanging on a steering wheel, the support implement comprising: two support plates which are movably connected with each other by means of a hinge which is located on the rear surface of the two support plates; a rotatable hanger which can be hung on the steering wheel and is located on each corner of the two connected support plates; a rotatable book page fixer which can fix a book page and is located on the lower portion of each support plate; a movable fixing leg which is fixedly installed by a hinge and is located in the rear surface of each support plate so that the support implement can be fixed to the steering wheel; and a horizontal fixing leg having a mobility and height adjustment function which is located in either support plate so that the support implement can be fixed to the steering wheel when articles are put on the support implement.

Preferably, each of the two support plates is formed of two plates having a front plate and a rear plate which are bonded with each other, in which the fixing legs and the horizontal fixing leg are bent in a certain form and formed in the rear plate. In this case, it is preferable the support plates are made of wood. Meanwhile, each of the two support plates may be formed in an integral form without fixing two plates having a front plate and a rear plate which are bonded with each other, in which a groove can be formed in the rear plate of each support plate so that

the fixing legs and the horizontal fixing leg can be safely inserted thereinto. In this case, it is preferable that the support plates are made of plastic.

5 The horizontal fixing leg is fixedly installed on a guide plate so that a cylinder can move around a fixing pin as an axle, in which one side of a central shaft is fixedly connected with a hanger plate having a groove and the other side thereof is inserted into the inside of the cylinder so as to be moved therein. Here, the height of the horizontal fixing leg and the direction of the
10 hanger plate can be adjusted by moving the central shaft, and the central shaft can be fixed with a height adjustment screw.

According to another embodiment of the present invention, the horizontal fixing leg is fixedly installed on a guide plate so that a cylinder can move around a fixing pin as an axle, in
15 which a hanger plate having a groove is rotatably inserted into a central shaft of the horizontal fixing leg, and the opposite side of the central shaft is movably inserted into the inside of the cylinder.

20 Brief Description of the Drawings

The above and other objects and advantages of the present invention will become more apparent by describing the preferred embodiment thereof in detail with reference to the accompanying drawings in which:

FIG. 1 is a front perspective view of a support implement hanging on a steering wheel according to the present invention;

FIG. 2 is a rear perspective view of a support implement hanging on a steering wheel according to the present invention;

5 FIG. 3 is a partial perspective view for describing a state of using hangers in the support implement hanging on the steering wheel according to the present invention;

FIG. 4 is a perspective view showing a horizontal fixing leg in the support implement hanging on the steering wheel
10 according to the present invention;

FIG. 5 is a side view for describing a state of using the horizontal fixing leg in the support implement hanging on the steering wheel according to the present invention;

FIG. 6 is a perspective view showing a horizontal fixing
15 leg according to another embodiment of the present invention;

FIG. 7 is a perspective view showing a state of using the support implement hanging on the steering wheel according to the present invention as a reading desk; and

FIG. 8 is a perspective view showing a state of using the
20 support implement hanging on the steering wheel according to the present invention as a support table where articles are put thereon.

Best Mode for Carrying out the Invention

Hereinbelow, a support implement hanging on a steering wheel according to the present invention will be described in detail with reference to the accompanying drawings.

FIG. 1 is a front perspective view of a support implement hanging on a steering wheel according to the present invention, and FIG. 2 is a rear perspective view of a support implement hanging on a steering wheel according to the present invention.

As shown in FIGs. 1 and 2, two support plates 12a and 12b are movably connected with each other by means of a hinge 22 which is located on the rear surface of the two support plates 12a and 12b. Four rotatable hangers 14 are fixed on the four corners of the two connected support plates 12a and 12b. The hangers 14 are used when a support implement 10 is intended to be fixedly hung on the steering wheel and are rotatable so as to be easily hung on the steering wheel. As shown, a certain groove is formed on the hanger plate so that the longer end portion of a hanger can be received on the support plate. A rotatable book page fixer 16 which can fix a book page is located on the lower portion of each support plate.

Referring to FIG. 2, fixing legs 18 and a horizontal fixing leg 20 are formed on the rear surfaces of the support plates. The movable fixing leg 18 is fixedly installed by a hinge 24 and is located in the rear surface of each support plate. When a user wants to use the support implement hanging on a steering wheel

as a reading desk, the support implement 10 is fixed to the steering wheel by using the hangers 14, and then both the fixing legs 18 are fixed to the steering wheel so that the support implement 10 is not moved but fixed more firmly. The horizontal fixing leg 20 is located in either support plate and is movably installed by means of two guide plates 20f and 20e and a fixing pin 20e. When a user wants to use the support implement hanging on a steering wheel as a support table where articles such as drinking water are put on the support implement, the support implement 10 is fixed to the steering wheel by using the hangers 14, and then the length of the horizontal fixing leg 20 is adjusted and then the groove of the hanger plate 20e is safely fitted into and fixed to the steering wheel, so that the support plate attached with the hangers which are not hung on the steering wheel is maintained level so that the support implement 10 is not moved but fixed on the steering wheel more firmly.

As shown, each of the two support plates 12a and 12b is formed of two plates having a front plate and a rear plate which are bonded with each other, in which the fixing legs 18 and the horizontal fixing leg 20 are bent in a certain form and formed in the rear plate. Meanwhile, each of the two support plates may be formed in an integral form without fixing two plates having a front plate and a rear plate which are bonded with each other, in which a groove matching the dimension of the fixing legs 18

and the horizontal fixing leg 20 can be formed in the rear plate of each support plate so that the fixing legs and the horizontal fixing leg can be safely inserted thereinto.

It is preferable that the support plates and hangers are
5 made of wood or plastic. A book page fixer is made of thick steel wire and the end portion thereof may be formed of plastic or rubber.

FIG. 3 is a partial perspective view for describing a state of using hangers in the support implement hanging on the steering wheel according to the present invention. A hanger 14 which can
10 be hung on the steering wheel is formed in each corner of the support plate and is rotatable so as to be hung on the steering wheel.

FIG. 4 is a perspective view showing a horizontal fixing leg in the support implement hanging on the steering wheel according to the present invention, and FIG. 5 is a side view
15 for describing a state of using the horizontal fixing leg in the support implement hanging on the steering wheel according to the present invention.

A cylinder 20c of the horizontal fixing leg 18 is fixedly
20 installed on two guide plates 20f which are fixed on the support plate so that the cylinder 20e can move around a fixing pin 20e as an axle. Here, one side of a central shaft 20b is fixedly connected with a hanger plate 20a having a groove and the other side thereof is inserted into the inside of the cylinder 20c so as to be moved

therein. Here, the height of the horizontal fixing leg 20 and the direction of the hanger plate 20a can be adjusted by moving the central shaft 20b left and right. When the support implement hanging on a steering wheel is used as a support table where articles
5 such as drinking water are put on the support implement, the support implement 10 is fixed to the steering wheel by using the hangers 14, and then the height of the horizontal fixing leg 20 and the direction of the hanger plate 20a are accurately adjusted, so that the support plates are maintained level, and the central
10 shaft 20b can be fixed using a height adjustment screw 20d.

FIG. 6 is a perspective view showing a horizontal fixing leg according to another embodiment of the present invention. Referring to FIG. 6, the horizontal fixing leg of FIG. 6 differs from that of FIG. 4, in which a protrusion formed in a hanger
15 plate 20a having a groove is rotatably inserted into a central shaft 20b and the central shaft 20b is movably inserted into the inside of the cylinder 20c, to thereby enable adjustment of a height of the horizontal fixing leg 20. Thus, a user moves the central shaft 20b left and right, to thus adjust a height of the
20 horizontal fixing leg 20 to be formed according to an inclined angle of the steering wheel. After adjusting the height of the central shaft into a height appropriate for his or her steering wheel, the central shaft 20b is fixed using a height adjustment screw 20d. Accordingly, since the height of the horizontal fixing

leg according to the inclined angle of his or her steering wheel has been adjusted by the central shaft, the user has only to adjust the horizontal axis only one time without needing to adjust it whenever he or she uses the support implement hanging on the steering wheel according to the present invention. The user fixes the central shaft 20b in correspondence to the height of the steering wheel, and then rotates the hanger plate 20a so that the steering wheel 30 is fixed into the groove of the hanger plate 20a.

FIG. 7 is a perspective view showing a state of using the support implement hanging on the steering wheel according to the present invention as a reading desk, and FIG. 8 is a perspective view showing a state of using the support implement hanging on the steering wheel according to the present invention as a support table where articles are put thereon.

As shown in FIG. 7, when a user intends to use the support implement hanging on the steering wheel according to the present invention as a reading desk, he or she hangs respective hangers 14 installed in the upper portions of the support plates 12a and 12b on a steering wheel 30, and fixes respective fixing legs 18 located in the rear surfaces of the support plates 12a and 12b on the steering wheel 30. Also, the user can fix a book or a book page using a book page fixer 16.

As shown in FIG. 8, when a user intends to use the support

implement hanging on the steering wheel according to the present invention as a support table on which various articles such as drinking water bottles are put, he or she hangs respective hangers 14 of the support plates 12a and 12b having no horizontal fixing leg 20 in the rear surface of a support plate, on a steering wheel 30, and adjusts the height of the horizontal fixing leg 20 formed in the rear surface of the other support plate which is not hung on the steering wheel, and the direction of the hanger plate. The height of the horizontal fixing leg is adjusted so that a support plate which is not hung on the steering wheel is maintained to be level, and the direction of the hanger plate is adjusted so that the groove of the hanger plate is safely inserted into the steering wheel. Accordingly, since one support plate can be maintained level as shown, foodstuffs such as drinking water bottles or cups 28 can be put on the support plate.

As described above, the technical features and merits of the present invention have been described a little more broadly so that a technical scope of the present invention to be claimed later can be understood well. Additional features and merits of the present invention should be grasped based on the above-described specification and the following claims. It should be understood by one skilled in the art that the disclosed concept and particular embodiments of the present invention can be immediately applied to a design and modification of other

structures for performing a similar objective to the present invention.

Also, the disclosed concept and particular embodiments of the present invention may be used by a person who has an ordinary skill in the art as a base for modifying or designing other structures in order to accomplish the same objective as that of the present invention. Also, the present invention is not limited to the above-described embodiments. It is apparent to one who has an ordinary skill in the art that there may be many modifications, replacement, and variations within the same technical spirit of the invention.

Industrial Applicability

As described above, a support implement hanging on a steering wheel according to the present invention includes hangers which can easily hang the support implement on the steering wheel, and two fixing legs and one horizontal fixing leg which are formed in the rear surface of the support implement so as to make the support implement fixed on the steering wheel more firmly. Accordingly, the support implement can be used as a support table where foodstuff such as drinking water can be put thereon as well as a reading table enabling a user to read a book thereon. Thus, anyone can use conveniently in an automobile car using a support

implement which can be used as a reading desk or a foodstuff support table.

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What is claimed is:

1. A support implement hanging on a steering wheel, the support implement comprising:

two support plates which are movably connected with each other by means of a hinge which is located on the rear surface of the two support plates;

a rotatable hanger which can be hung on the steering wheel and is located on each corner of the two connected support plates;

a rotatable book page fixer which can fix a book page and is located on the lower portion of each support plate;

a movable fixing leg which is fixedly installed by a hinge and is located in the rear surface of each support plate so that the support implement can be fixed to the steering wheel; and

a horizontal fixing leg having a movability and height adjustment function which is located in either support plate so that the support implement can be fixed to the steering wheel when articles are put on the support implement.

2. The support implement hanging on a steering wheel of claim 1, wherein each of the two support plates is formed of two plates having a front plate and a rear plate which are bonded with each other, in which the fixing legs and the horizontal fixing leg are bent in a certain form and formed in the rear plate.

3. The support implement hanging on a steering wheel of claim 1, wherein a groove can be formed in the rear plate of each support plate so that the fixing legs and the horizontal fixing leg can be safely inserted thereinto.

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4. The support implement hanging on a steering wheel of claim 1, wherein the horizontal fixing leg is fixedly installed on a guide plate so that a cylinder can move around a fixing pin as an axle, in which one side of a central shaft is fixedly connected with a hanger plate having a groove and the other side thereof is inserted into the inside of the cylinder so as to be moved therein, and wherein the height of the horizontal fixing leg and the direction of the hanger plate can be adjusted by moving the central shaft, and the central shaft can be fixed with a height adjustment screw.

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5. The support implement hanging on a steering wheel of claim 1, wherein the horizontal fixing leg is fixedly installed on a guide plate so that a cylinder can move around a fixing pin as an axle, in which a hanger plate having a groove is rotatably inserted into a central shaft of the horizontal fixing leg, and the opposite side of the central shaft is movably inserted into the inside of the cylinder.

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FIG. 1

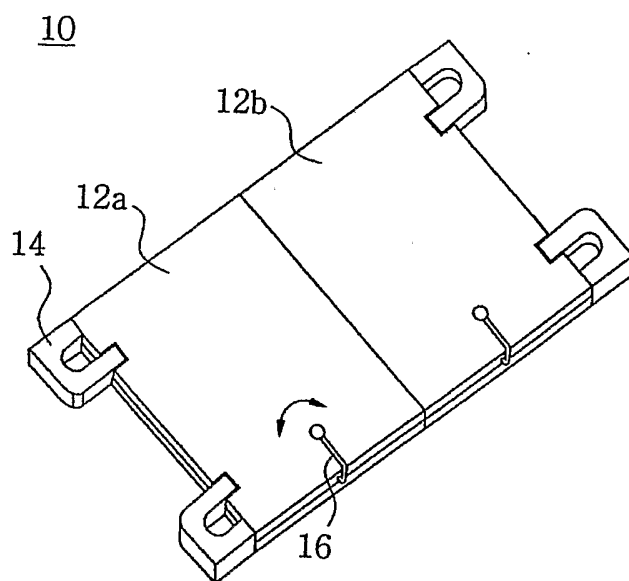
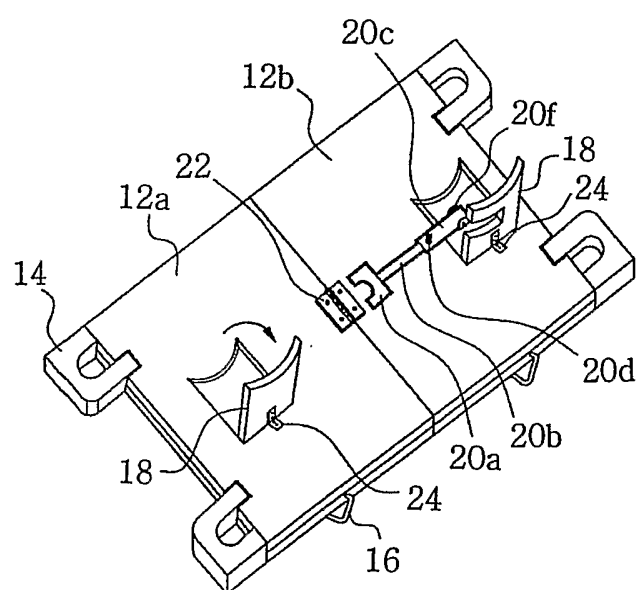


FIG. 2



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FIG. 3

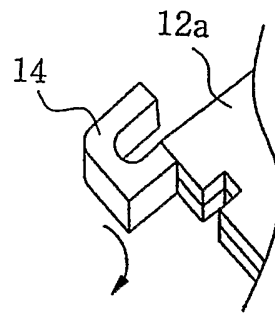
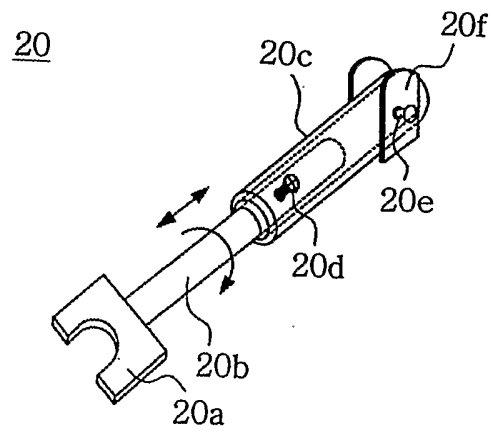


FIG. 4



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FIG. 5

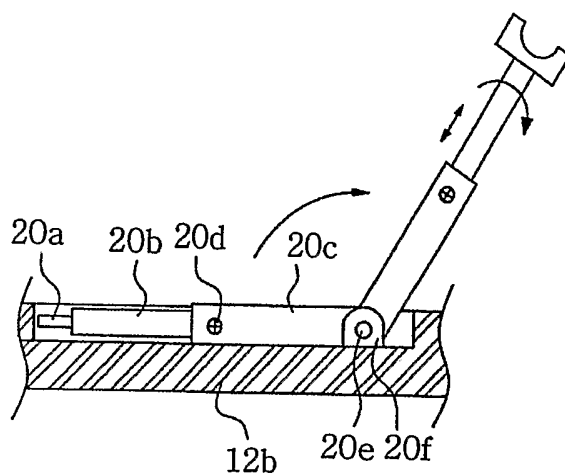
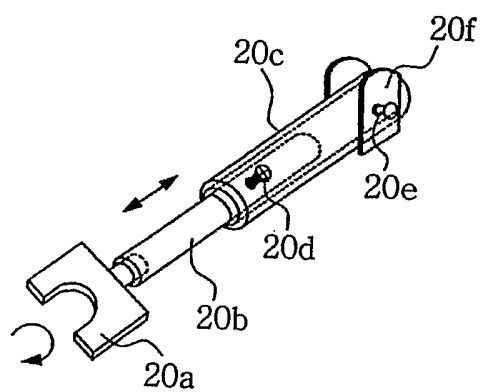


FIG. 6



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FIG. 7

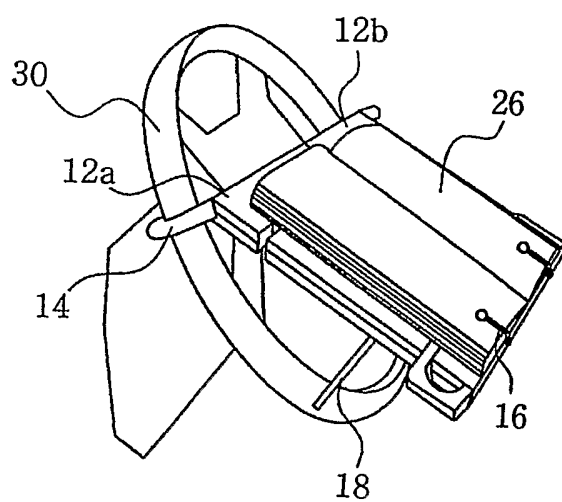
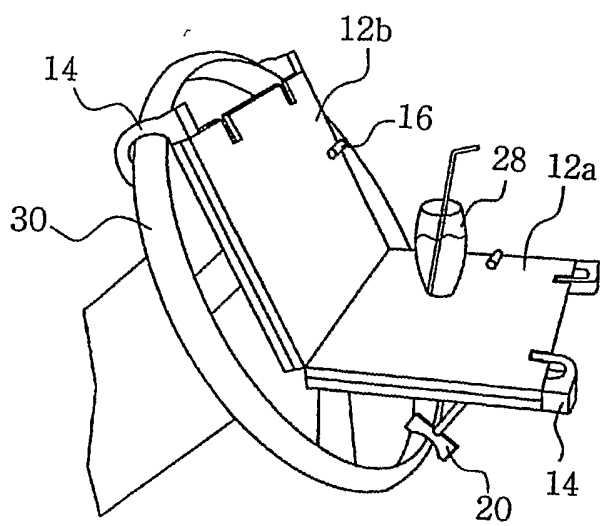


FIG. 8



INTERNATIONAL SEARCH REPORT

International application No.

PCT/KR2004/001457

A. CLASSIFICATION OF SUBJECT MATTER**IPC7 B62D 1/04**

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B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

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

Korean Patent and Utility Model Publication since 1975

Japanese Utility Model Publication since 1975

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

Patent Search System in Korean Intellectual Property Office

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	JP 01-116745U (NISSAN DIESEL CORP.) 7 August 1989 Claim 1, Fig. 1,2,3	1,2
Y	JP 56-143936U (UEHARA DOSISANE) 30 October 1981 Claim 1, Fig. 2,3	1,2
A	KR 1998-23708U (DAEWOO MOTOR CORP.) 25 July 1998 Claim 1, Fig. 1,2	1,2,4,5
A	JP 62-42440U (GANADA JOKO) 13 March 1987 Claim 1, Fig. 1	1
A	JP 04-151338 (OKUGAWA YOSHIAKI) 25 May 1992 Claim 1, Fig. 1,2	1

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

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INTERNATIONAL SEARCH REPORT

Information on patent family members

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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
JP 01-116745U	07.08.1989	None	
JP 56-143936U	30.10.1981	None	
KR 1998-23708U	25.07.1998	None	
JP 62-042440U	13.03.1987	None	
JP 04-151338	25.05.1992	None	