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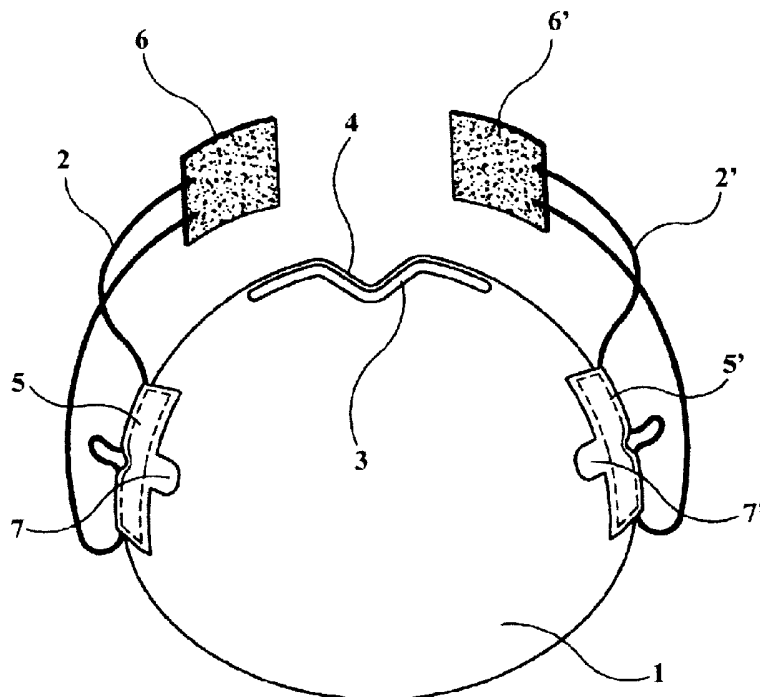
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For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: DUSTPROOF MASK EASY TO WEAR AND REMOVE



(57) Abstract: The present invention relates to an dustproof mask easy to wear and remove. According to the above process, a dustproof mask easy to wear and remove decreases the pressure on the nose and the area under eyes and stabilizes the wearing position due to a streamlined groove, is easy to remove due to handles, is easy to wear and remove due to adhesive part with Velcro tape, and has the excellent effect on stable wearing because Velcro tape doesn't slip from hair easily.

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DUSTPROOF MASK EASY TO WEAR AND REMOVE

BACKGROUND OF THE INVENTION

5

Field of the Invention:

The present invention relates to a disposable dustproof mask for preventing inhalation of dust or harmful substances, particularly to a dustproof mask that consists of fixing equipments with handle, attached to the both sides of the usual hemisphere
10 dustproof mask, and adhesive parts with corresponding Velcro tapes, thus, is easy to wear, and also easy to remove due to the handle attached to the said fixing equipment, and keeps oneself from slipping from hair by the adhesive parts with Velcro tape.

Description of the Prior Art:

15 Generally, a lot of dust occurs in the working environment such as paper mills, textile manufactories, quarries, and the like, and much poisonous gas in chemical factories, metal processing shops for welding, refining, and plating, and the like. The continuous inhalation of these substances may cause workers fatal diseases

and also cause asthma. Therefore, it is necessary to wear a mask and thus protect from harmful environments.

Responding to the needs, depending on the work places, although the mask consisting of the filter which has various dust proof or poison proof materials in, even dust
5 and poison proof materials with the padding that active carbon was spread over, or the goods consisting of paper filter were used, the price of those products were relatively high, the replacement should be done every three or four days, and the filtering rate couldn't meet the expectation, therefore, in the working environments that take the sanitation seriously, a disposable dustproof mask was frequently used

10 Therefore, recently, a hemisphere dustproof mask was generally used because of the relative inexpensiveness and usability for once or several times depending on the pollution level of the working place.

The said hemisphere dustproof mask, as shown at fig. 5, has hanging bands(101)(101') attached to the both side of a hemisphere filter body(100) made out of
15 filter paper. The ends of the hanging bands(101)(101') are connected by a separate fixing pad. The pad(102) is located on the wearing person's back head and the filter body(100) is located on the nose and mouth, thus the dust or harmful substances are filtered. The bent wire(103) attached to the upper part of the filter body(100) can be bent fitting to the curvature of the nose and thus the filtering rate increases. However, the hemisphere shape
20 of the filter body(100) of the said usual dust proof mask causes serious pressure on the muzzle and the area under eyes, makes the mask's wearing position unstable, and makes

opening around the wearing person's nose during hard work, thus causes the problem that dust and harmful substances are inhaled.

Moreover, the said fixing pads are connecting hanging bands, and thus, the mask should be put on or removed over the head, and when wearing hat, it is annoying for the
5 worker to remove hat before wearing or removing the mask

When removing the said mask, gripping with the hand stained with harmful substances may contaminate the mask and thus, it is not easy to remove with one hand

10 SUMMARY OF THE INVENTION

The present invention relates to a disposable dustproof mask for preventing inhalation of harmful substances. The invention consists of a groove on the upper part of a usual hemisphere dustproof mask and the attached corresponding wavy bent. One side of hanging bands is attached to the filter by fixing equipment with a handle, and the other side
15 is formed into an adhesive part with Velcro tape.

Thus, streamlined groove decreases the pressure on the nose and the area under eyes, and helps the wearing position stable. Handles make it easy to remove the mask, and adhesive parts with Velcro tape make it easier to wear and remove, and keep the parts from slipping from hair and increase the wearing stability.

BRIEF DESCRIPTION OF THE DRAWINGS

The aforementioned aspects and other features of the present invention will be explained in the following description, taken in conjunction with the accompanying
5 drawings, wherein:

Fig. 1 is a perspective view of the present invention, dustproof mask easy to wear and remove

Fig. 2 is a dimensional plan of the present invention, dustproof mask easy to wear and remove

10 Fig. 3 shows a state that the present invention is put on.

Fig. 4 shows a state that the present invention is put on in a different way.

Fig. 5 is a perspective view of a usual dustproof mask

LIST OF REFERENCE NUMERALS

15	1: filter	2,2': hanging band
	3: bent wire	4: groove
	5,5': fixing equipment	6,6': adhesive part

7,7': handle

DETAILED DESCRIPTION OF PREFERRED EMBODIMENTS

5 The present invention will be described in detail by way of a preferred embodiment with reference to accompanying drawings.

Fig. 1 is a perspective view of the present invention, dustproof mask

Fig. 2 is a dimensional plan of the present invention, dustproof mask

Fig. 3 shows a state that the present invention is put on.

10 Fig. 4 shows a state that the present invention is put on in a different way.

Hanging bands(2)(2') are formed on the each side of the hemisphere filter body(1), a streamlined groove is formed on the upper outside part of the said filter body(1) and wavy bent wire (3) corresponding to the curvature is attached.

 The said hanging bands(2)(2') are inserted to fixing equipments(5)(5') with handle
15 and then attached to the each side of filter body(1). The adhesive parts(6)(6') with Velcro tape are formed and connected by the adhesion of the both adhesive parts.

 The following describe the embodiment of the present invention in detail with drawings.

As mentioned above, the filter body of the dustproof mask is located on the wearing person's face and therefore it does not adhere closely to the uneven area such as muzzle.

Therefore, usually bent wire(3) was used and forced to be bent fitting to the shape
5 of the nose.

However, as mentioned above, the serious pressure on the nose and the area under eyes occurs, when the mask is put on for a while. The present invention, dustproof mask has the streamlined groove on the upper part of the filter paper(1) and the bent wire(3) is formed in wavy shape according to the shape of the groove edge, which makes
10 the mask adhere closely to the face, decrease the pressure, and thus enables more comfortable wearing.

Moreover, the fixing equipments(5)(5') connecting the hanging band(2)(2') and the filter paper are attached by heat or sewing. The equipments have the hanging band inserted, thus, enable to adjust the length of the hanging bands(2)(2') and increase the
15 strength of the fixation at the same time.

The fixing equipments have handles(7)(7') that allow the wearing person to grip them when removing the mask from his face easily.

So, it enables an easier removal of the mask and also minimizes the contamination of the mask, even when the wearing person's hands are stained by contaminating
20 substances.

Furthermore, the adhesive parts(6)(6') with Velcro tape are formed at the other sides of the said hanging bands(2)(2'). The hanging bands are connected by the adhesion of the corresponding adhesive parts and the adhesive parts are located on the wearing person's back head.

- 5 The said adhesive parts(6)(6'), moreover, are composed of Velcro tape, and the Velcro tape doesn't easily slip from the wearing person's hair and thus mask isn't taken off even during hard work.

Furthermore, the adhesion by the Velcro tape enables to adjust the length of the adhered part and easy to wear with the simple adjustment of the length.

10 TECHNICAL TASK THAT THE PRESENT INVENTION SEEKS TO

- The present invention is invented to eliminate the above-stated problems. The invention consists of a groove on the upper part of the said usual dustproof mask and the counterpart wavy bent wire attached to. An end of the hanging band is fastened to the filter paper by the fixing equipment with handle and the other end forms adhesive part with
- 15 Velcro tape. The streamlined groove decreases the pressure on the nose and the area under eyes and helps the wearing position stable, the handle makes it easy to take off the mask, and the adhesive part with Velcro tape makes it easier to wear and remove. Thus the object of the present invention is providing the dustproof mask that is easy to wear and remove and has the excellent wearing stability due to the Velcro tape that keeps the mask
- 20 from slipping from hair.

WHAT IS CLAIMED IS:

1. Hanging bands(2)(2') are formed on the both sides of the hemisphere
filter body(1), and in a dustproof mask of which a streamlined groove is formed on the
5 upper outside part of the filter body(1),

a streamlined groove is formed on the upper center part of the said filter body(1),
and a wavy bent wire (3) corresponding to the curvature is attached.

The said hanging bands(2)(2') are inserted into fixing equipments(5)(5') with
handle and then attached to the each side of filter body(1). The adhesive parts(6)(6') with
10 Velcro tape are formed and connected by the adhesion of the both adhesive parts. A
dustproof mask easy to ware and remove has the above features.

FIG. 1

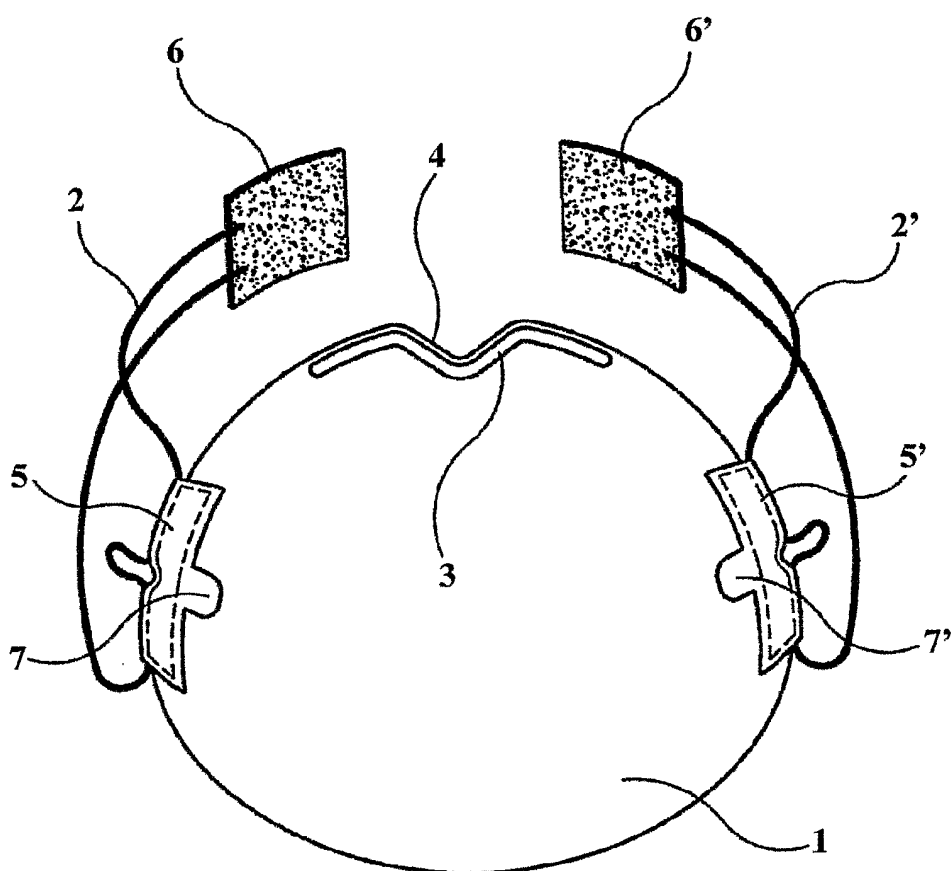


FIG. 2

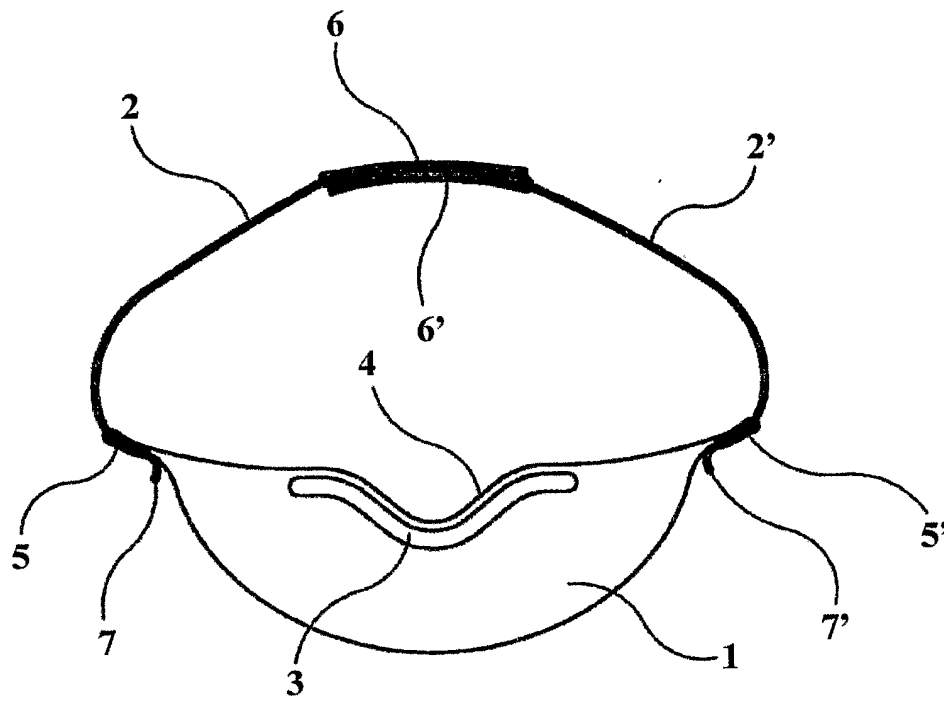


FIG. 3

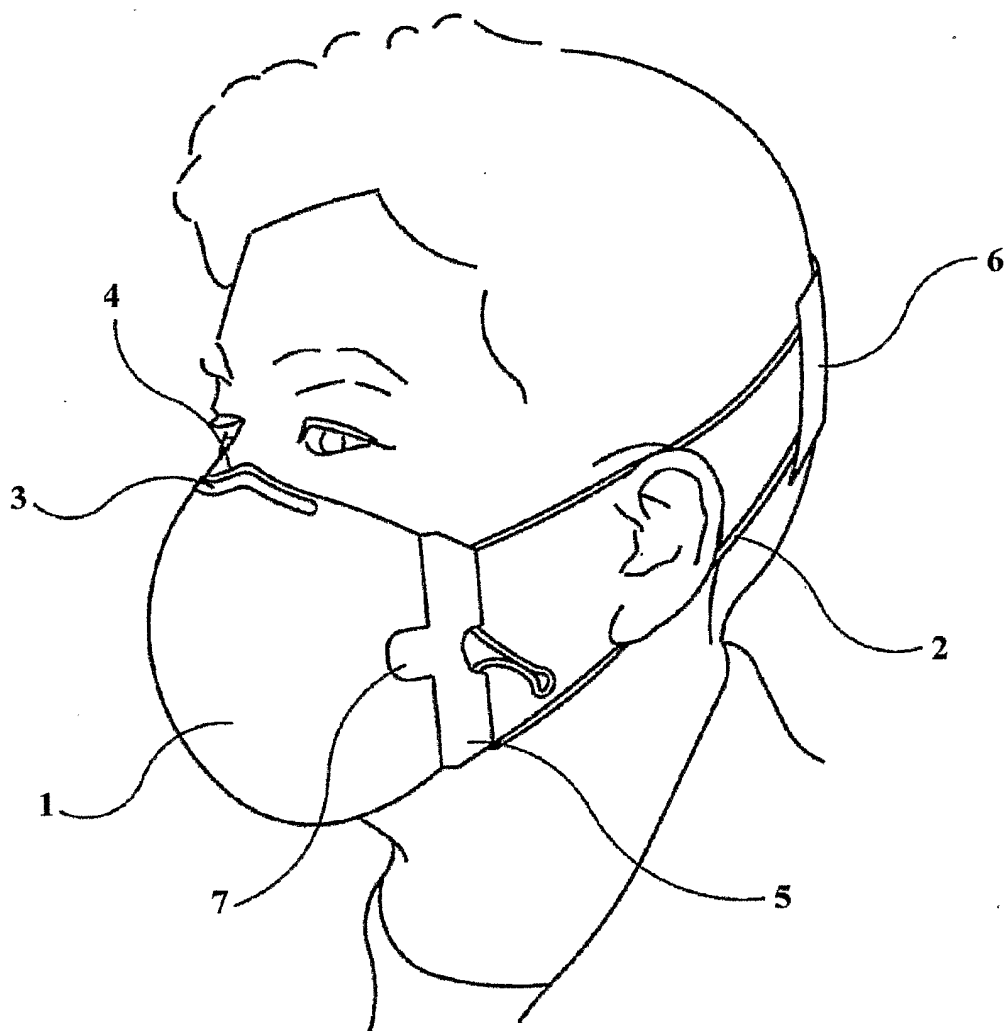


FIG. 4

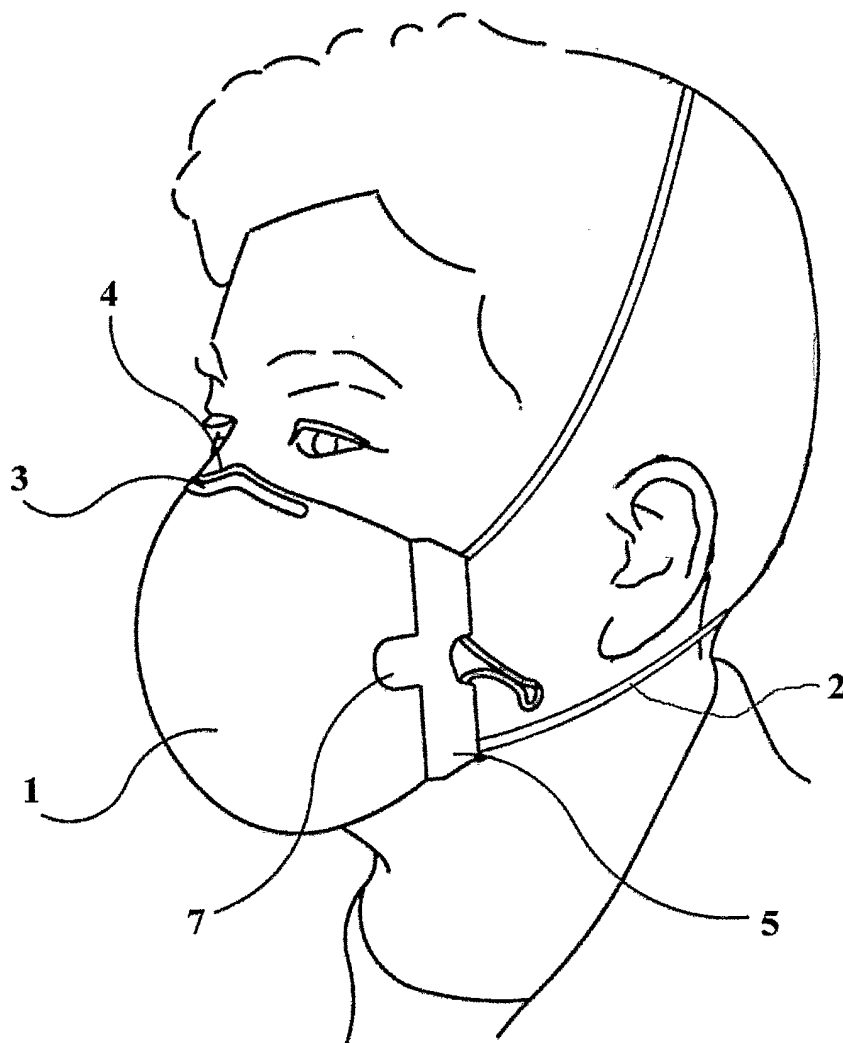
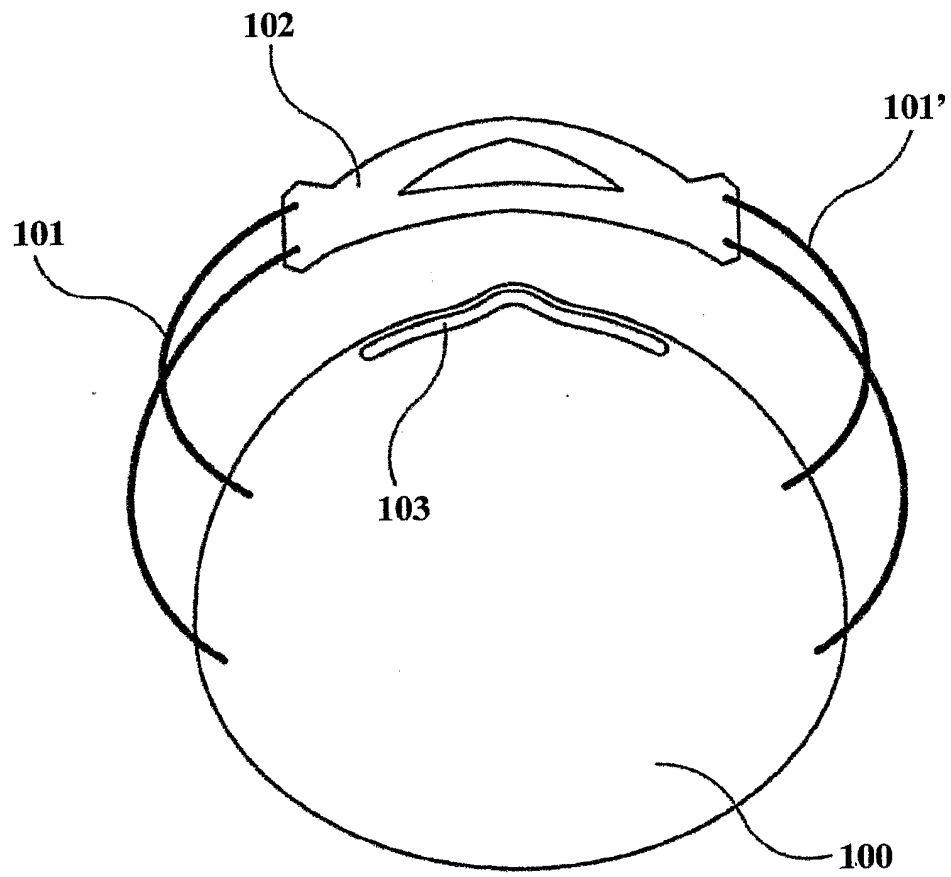


FIG. 5



INTERNATIONAL SEARCH REPORT

International application No.
PCT/KR03/00152

A. CLASSIFICATION OF SUBJECT MATTER

IPC7 A62B 18/02

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)

IPC7 : A62B 18/02

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
Korea Patents and applications for inventions since 1975

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

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	JP11-206896A(MINNESOTAMINING & MFG CO<3M>) 3 AUGUST 1999	1
A	JP10-099457A (JAPAN VILENE CO LTD) 21 APRIL 1998	1
A	KR99-014607A(DEAGOOK CO LTD) 25 FEBRUARY 1999	1
A	KR20-0179830Y1(CHOI JONG GIL) 15 APRIL 2000	1

☐ 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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"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"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

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"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


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