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Publication number: **0 483 377 A1**

**EUROPEAN PATENT APPLICATION**  
published in accordance with Art.  
158(3) EPC

Application number: **91909144.7**

Int. Cl.<sup>5</sup>: **B05B 15/04**

Date of filing: **20.05.91**

International application number:  
**PCT/JP91/00674**

International publication number:  
**WO 91/17837 (28.11.91 91/27)**

Priority: **21.05.90 JP 52729/90 U**

Date of publication of application:  
**06.05.92 Bulletin 92/19**

Designated Contracting States:  
**DE FR GB IT SE**

Applicant: **NAGOYA OILCHEMICAL CO., LTD.**  
**213-5 Honowari, Minamishibata-cho**  
**Tokai-shi, Aichi476(JP)**

Inventor: **HORIKI, Seinosuke, Nagoya**

**Oilchemical Co., Ltd.**

**213-5 Honowari Minamishibata-cho Tokai-shi**  
**Aichi 476(JP)**

Inventor: **MAKINO, Reiji, Nagoya Oilchemical**  
**Co., Ltd.**

**213-5 Honowari Minamishibata-cho Tokai-shi**  
**Aichi 476(JP)**

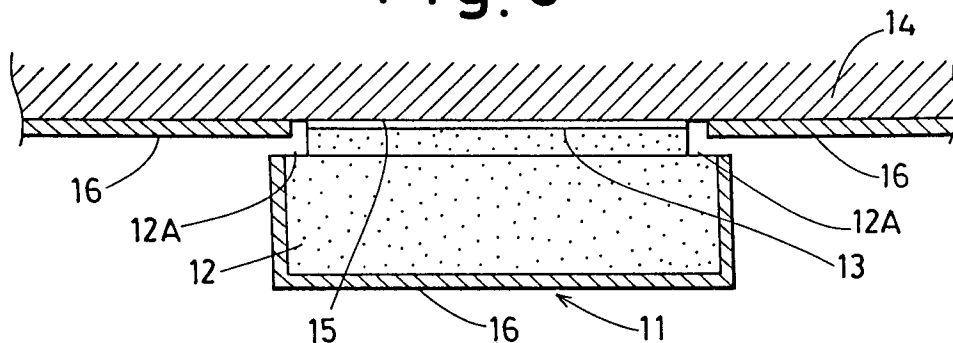
Representative: **Senior, Alan Murray et al**  
**J.A. KEMP & CO 14 South Square Gray's Inn**  
**London WC1R 5EU(GB)**

**MASKING MATERIAL.**

An object of this invention is to easily peel off a masking material after completion of surface treatment. In this invention, for attaining the above object, a stepped part is formed on the peripheral edge of the masking material having an adhesive layer

formed on one surface of a plate-like body. Since a surface treatment film is cut by said stepped part at the peripheral edge of the masking material, the masking material can be peeled off without obstructed by said surface treatment film.

**Fig. 3**



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## FIELD OF THE INVENTION

The present invention relates to a masking member used to protect a part of the surface of an article from a surface treatment such as coating, plating and the like when said surface treatment is effected on said surface of said article.

For instance, polyvinyl-chloride sol, tar-urethane, and the like have been coated on the underside of the floor of cars, however, said underside of the floor of cars has many holes such as bolt holes, cable holes, drainage holes, shaft holes and the like, and has places where parts of brackets and the like are attached, and the masking member is attached to said holes and said parts before coating to protect them so that the paint does not go into said holes and coating film is not formed on said parts to which parts are attached which would decrease the fastening strength of said parts.

## DESCRIPTION OF THE PRIOR ART

Hitherto, a masking member consisting of a panel (2) of a polystyrene foam wherein an adhesive layer (3) is formed on one side of said panel (2) has been provided as shown in Fig. 10 (Jikkai Sho 62-5852).

Said masking member (1) is attached to a part (5) of an article (4) to be protected by said adhesive layer (3) as shown in Fig. 11 and after coating, said masking member (1) is removed from said part (5).

Nevertheless, since the surface of said masking member (1) is also covered with a coating film (6) on coating said part (5), when said masking member (1) is removed from said part (5) of said article (4) after said coating, it may be difficult to remove said masking member (1) smoothly since said coating film (6) obstructs the removing of said masking member (1). For instance, as said masking member (1) consists of such as a plastic foam, when said masking member (1) is heated, said masking member (1) contracts and automatically drops from said part (5) of said article (4), but in a case where said masking member (1) is covered with said coating film (6), said contracting masking member (1)A may be obstructed from dropping automatically as shown in Fig. 12. Further, although said masking member (1) is easily stabbed by a hook (7) and the like, when said masking member (1) is stabbed by said hook (7) to remove from said part (5), said coating film (6) around said masking member (1) is broken so as to be delaminated from the surface of said article (4).

## DISCLOSURE OF THE INVENTION

The present invention provides a masking member consisting of a panel (12) wherein an adhesive layer (13) is formed on one side of said panel (12) and a lacking part (12)A is formed around the circumference of said side as a means to solve said prior problem.

Said masking member (11) of the present invention is attached to a part of an article to be protected by said adhesive layer (13) and a film of a surface treatment formed on the surface of said article is cut by said lacking part (12)A formed around the circumference of said side of said masking member (11) in which said adhesive layer (13) is formed.

Accordingly, as said film around said masking member is cut, said masking member is easily removed from said part after a surface treatment.

## BRIEF DESCRIPTION OF THE DRAWINGS

Figs. 1 to 5 each show an embodiment of the present invention. Fig. 1 is a perspective view, Fig. 2 is a side view, Fig. 3 is a side sectional view when said masking member is used, Fig. 4 is a side sectional view when said masking member is contracted by heating and is removed, Fig. 5 is a side sectional view when said masking member is removed by a hook, Fig. 6 is a partial perspective view of assembled masking members, Fig. 7 is a perspective view of another embodiment of the present invention, Figs. 8 and 9 each show a further embodiment; Fig. 8 is a perspective view, Fig. 9 is a side sectional view of a masking member contracted by heating, and Figs. 10 to 13 each show a prior embodiment; Fig. 10 is a perspective view, Fig. 11 is a side sectional view when said masking member is used, Fig. 12 is a side sectional view of said masking member contracted by heating, Fig. 13 is a side sectional view when said masking member is removed by a hook.

In the DRAWINGS,

- (11) Masking member
- (12) Panel
- (12)A Lacking part
- (13) Adhesive layer

## DESCRIPTION OF THE INVENTION

Describing the present invention by the embodiments shown in Figs. 1 to 5, a masking member (11) consists of a panel (12) and an adhesive layer (13) formed on one side of said panel (12) wherein a lacking part (12)A is formed around the circumference of said side. As shown in Fig. 2, it may be preferable that the width W of said lacking

part (12)A is more than 1 mm and the height h is in the range between 0.2 and 10 mm, more preferably 0.5 and 5 mm.

A masking member (11) of the present invention is made of a plastic such as polystyrene, polyethylene, polypropylene, polyvinyl-chloride, polyurethane, melamine resin, urea resin, phenol resin and the like, a reinforced plastic wherein an inorganic filler such as calcium carbonate, talc, bentonite and the like is mixed in said plastic, a foamed plastic of said plastic, a synthetic rubber such as styrene-butadiene rubber, acrylonitrile-butadiene rubber and the like, a natural rubber, a molded fiber material wherein wood fiber, synthetic fiber, natural fiber, inorganic fiber etc. is bound by a binder to mold wood, paper, reclaimed paper, corrugated card-board, metal, and a complex or a laminate of two or more of said materials.

As shown in Fig. 3, said masking member (11) is attached to a part (15) of an article (14) to be protected by said adhesive layer (13), and a surface treatment such as a coating by using a paint such as polyvinyl-chloride sol and the like is effected on the surface of said article (14). A film (16) of said surface treatment is formed on the surface of said article (14), and said film (16) is cut around the circumference of said masking member (11) by said lacking part (12)A of said masking member (11). In this case, if the width W of said lacking part (12)A of said masking member (11) is less than 1 mm and the height h of said lacking part (12)A is less than 0.2 mm, it may be difficult to smoothly cut said film (16) by said lacking part (12)A, and if the height h of said lacking part (12)A is higher than 10 mm, said film (16) may be formed in the inside of said lacking part (12)A and it may be difficult to smoothly cut around the circumference of said masking member (11).

After said surface treatment, said masking member (11) is removed from said part (15) of said article (14) and in a case where said masking member (11) consists of a material which can be contracted by heating such as a plastic foam, said masking member (11) is contracted by heating at a higher temperature than the contracting temperature of said masking member as shown in Fig. 4. Said contracted masking member (11)A may drop automatically from said part (15) without any obstruction of said film (16). Further, said masking member (11) may be removed from said part (15) by a hook (17) as shown in Fig. 5. In this case, if the height h of said lacking part (12)A of said masking member (11) is higher than 5 mm, said hook (17) may be easily engaged at said lacking part (12)A and the removing work of the masking member is easily performed. And since said film (16) is already cut around the circumference of

said masking member (11), when said masking member (11) is removed, said film (16) may not be broken and delaminated from said part (15).

As shown in Fig. 6, a plural number of said masking members (11) may be assembled inter-mediating a plural number of snapping grooves (18) to form an assembled masking member (10). When said assembled masking member (10) is used, one masking member (11) is snapped out along said snapping grooves (18). Further, a piece consisting of a plural number of masking members (11) such as  $1 \times 2$ ,  $2 \times 2$ ,  $1 \times 3$ ,  $2 \times 3$ ,  $3 \times 3$  and the like may be snapped out according to the shape and the size of said part (15) of said article (14) to be protected.

Fig. 7 shows another embodiment of the present invention. In this embodiment, a cut-away open space (12)B is formed in the center of one side of a masking member (11) around which an adhesive layer (13) is formed. Accordingly, in said masking member (11), the area of said adhesive layer (13) is reduced by said cut-away open space (12)B and as a result, the bonding strength of said masking member (11) to said part (15) may be reduced so as to remove said masking member (11) easily from said part (15).

Fig. 8 shows further embodiment of the present invention. In this embodiment, a dent (12)C having a crater shape is formed in the center of one side of a masking member (11) wherein an adhesive layer (13) is formed on the other side of said masking member (11). When said masking member (11) is attached by hand, a finger is put in said dent (12)C. Further, since said masking member (11) may be easily contracted and deformed by said dent (12)C as shown in Fig. 9 when said masking member (11) is heated to be softened, said masking member (11) may be more easily removed from said part (15) of said article (14).

## Claims

1. A masking member consisting of a panel wherein an adhesive layer is formed on one side and a lacking part is formed around the circumference of said side.



Fig. 4

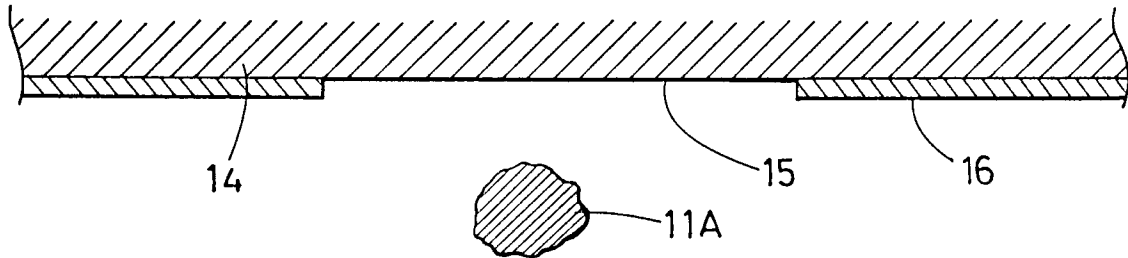


Fig. 5

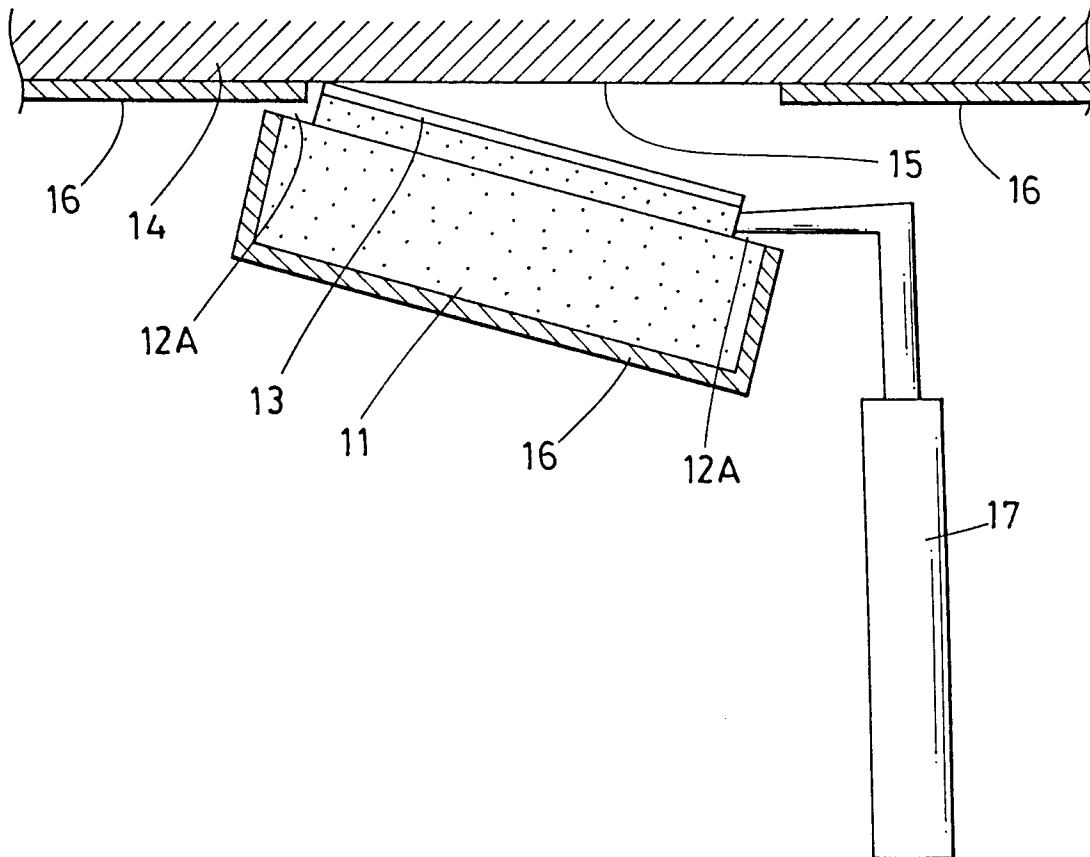


Fig. 6

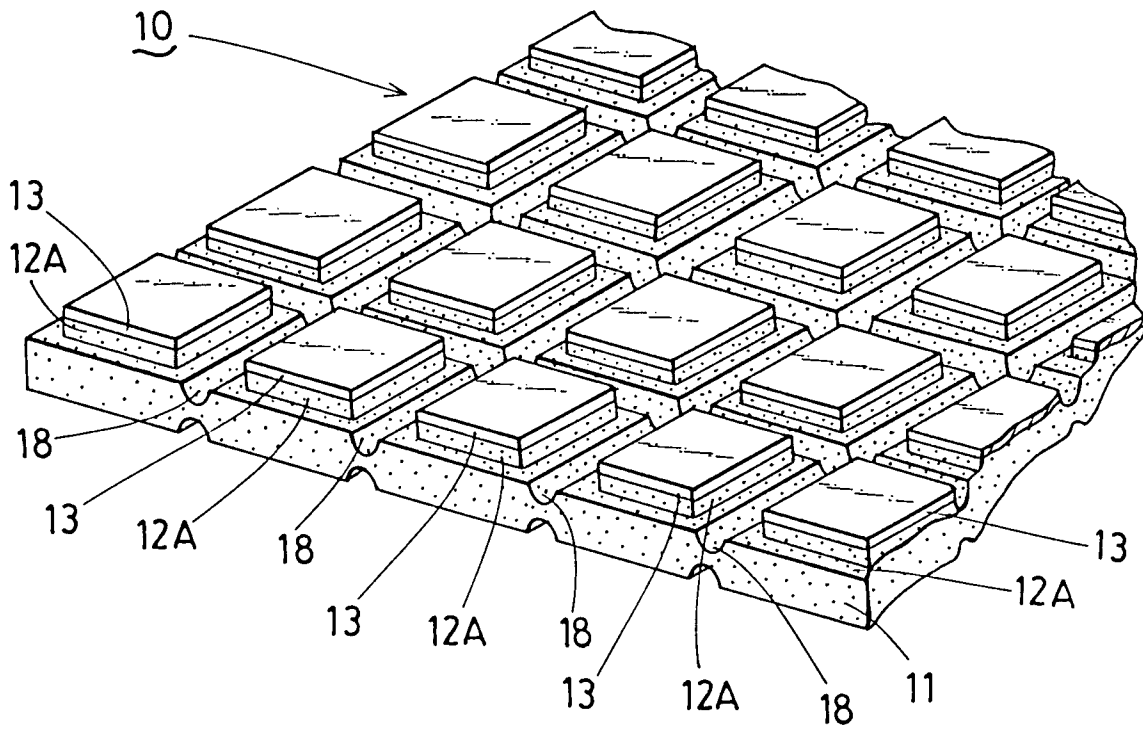


Fig. 7

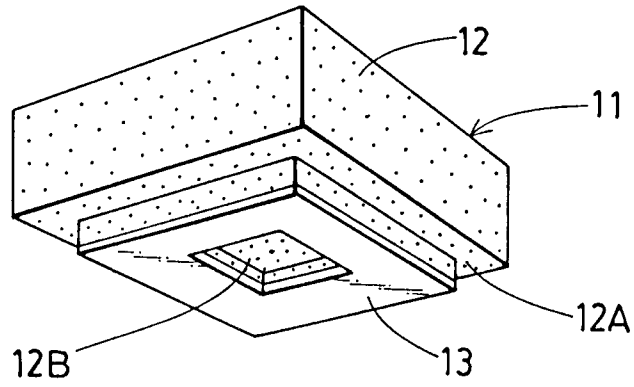


Fig. 8

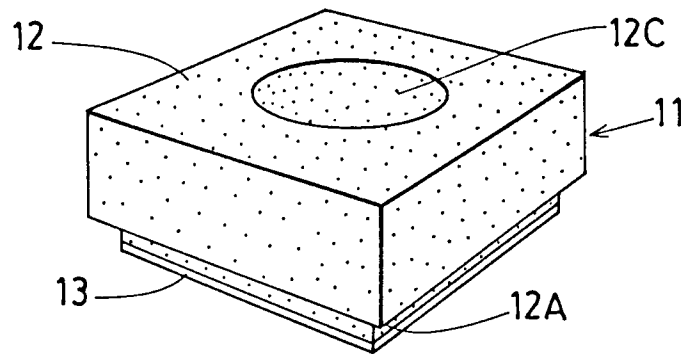


Fig. 9

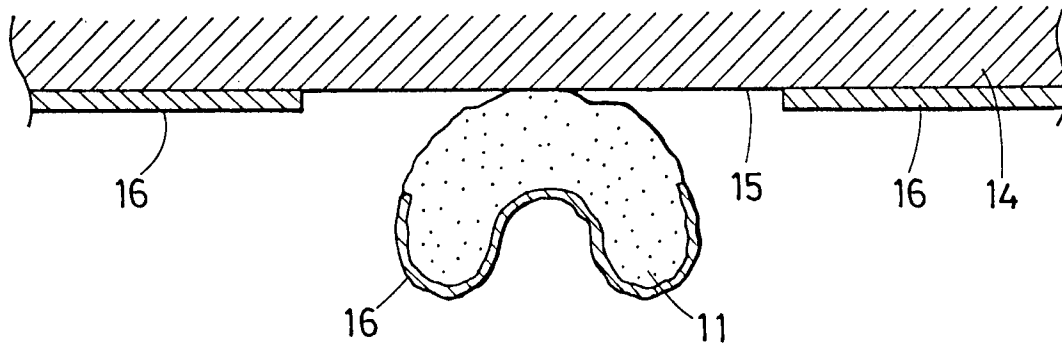


Fig.10

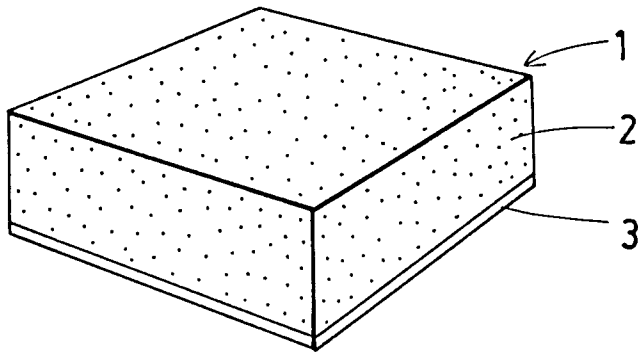


Fig.11

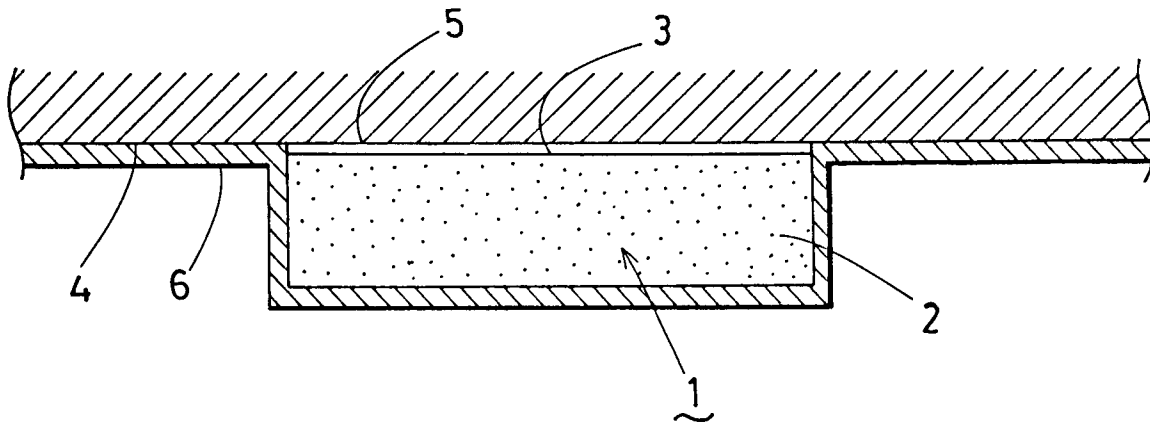


Fig. 12

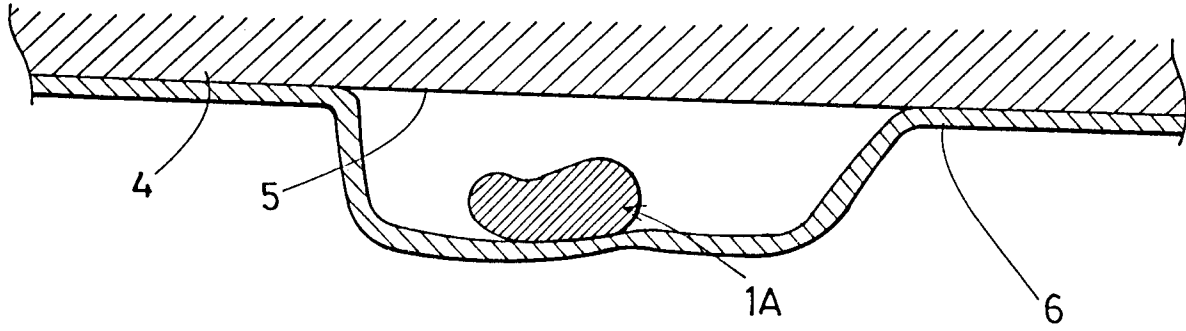
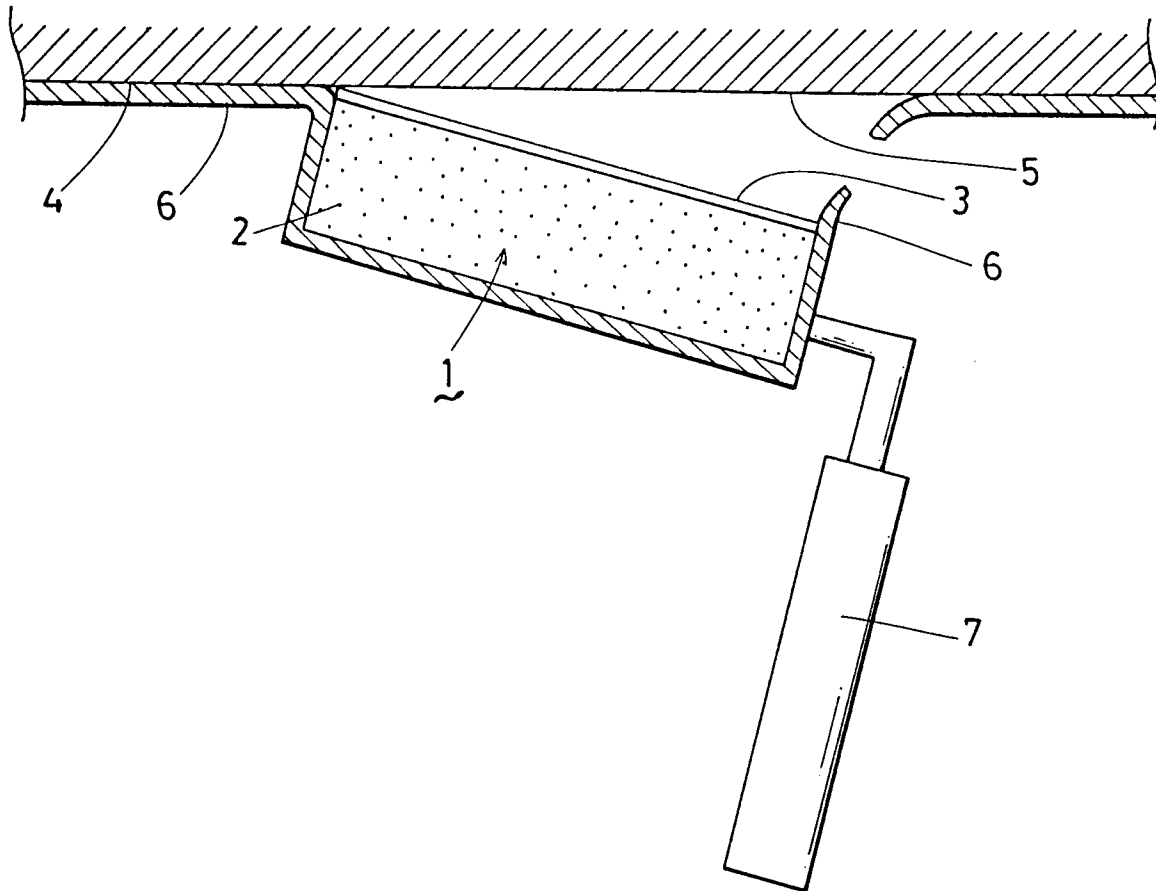


Fig. 13



# INTERNATIONAL SEARCH REPORT

International Application No PCT/JP91/00674

<b>I. CLASSIFICATION OF SUBJECT MATTER</b> (if several classification symbols apply, indicate all) <sup>6</sup>				
According to International Patent Classification (IPC) or to both National Classification and IPC				
Int. Cl <sup>5</sup> B05B15/04				
<b>II. FIELDS SEARCHED</b>				
Minimum Documentation Searched <sup>7</sup>				
Classification System <sup>8</sup>	Classification Symbols			
IPC	B05B15/04			
Documentation Searched other than Minimum Documentation to the Extent that such Documents are Included in the Fields Searched <sup>8</sup>				
Jitsuyo Shinan Koho	1926 - 1990			
Kokai Jitsuyo Shinan Koho	1971 - 1990			
<b>III. DOCUMENTS CONSIDERED TO BE RELEVANT <sup>9</sup></b>				
Category <sup>*</sup>	Citation of Document, <sup>11</sup> with indication, where appropriate, of the relevant passages <sup>12</sup>	Relevant to Claim No. <sup>13</sup>		
Y	JP, U, 62-17372 (Nichiban Co., Ltd.), February 2, 1987 (02. 02. 87), (Family: none)	1		
Y	JP, U, 62-56171 (Nagoya Yuka K.K.), April 7, 1987 (07. 04. 87), (Family: none)	1		
Y	JP, U, 63-28176 (Nagoya Yuka K.K.), February 24, 1988 (24. 02. 88), (Family: none)	1		
<p><sup>*</sup> Special categories of cited documents: <sup>10</sup></p> <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; border: none;"> <p>"A" document defining the general state of the art which is not considered to be of particular relevance</p> <p>"E" earlier document but published on or after the international filing date</p> <p>"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)</p> <p>"O" document referring to an oral disclosure, use, exhibition or other means</p> <p>"P" document published prior to the international filing date but later than the priority date claimed</p> </td> <td style="width: 50%; border: none;"> <p>"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</p> <p>"X" document of particular relevance: the claimed invention cannot be considered novel or cannot be considered to involve an inventive step</p> <p>"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</p> <p>"&amp;" document member of the same patent family</p> </td> </tr> </table>			<p>"A" document defining the general state of the art which is not considered to be of particular relevance</p> <p>"E" earlier document but published on or after the international filing date</p> <p>"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)</p> <p>"O" document referring to an oral disclosure, use, exhibition or other means</p> <p>"P" document published prior to the international filing date but later than the priority date claimed</p>	<p>"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</p> <p>"X" document of particular relevance: the claimed invention cannot be considered novel or cannot be considered to involve an inventive step</p> <p>"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</p> <p>"&amp;" document member of the same patent family</p>
<p>"A" document defining the general state of the art which is not considered to be of particular relevance</p> <p>"E" earlier document but published on or after the international filing date</p> <p>"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)</p> <p>"O" document referring to an oral disclosure, use, exhibition or other means</p> <p>"P" document published prior to the international filing date but later than the priority date claimed</p>	<p>"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</p> <p>"X" document of particular relevance: the claimed invention cannot be considered novel or cannot be considered to involve an inventive step</p> <p>"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</p> <p>"&amp;" document member of the same patent family</p>			
<b>IV. CERTIFICATION</b>				
Date of the Actual Completion of the International Search	Date of Mailing of this International Search Report			
July 18, 1991 (18. 07. 91)	August 5, 1991 (05. 08. 91)			
International Searching Authority	Signature of Authorized Officer			
Japanese Patent Office				