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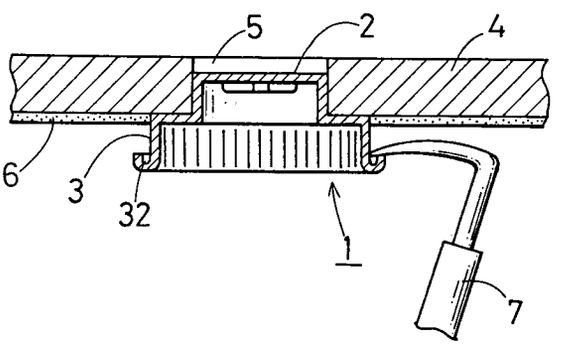
(54) A masking member.

(57) A masking member used to protect the inside and circumference of a hole of an article from a surface treatment such as coating. The masking member comprises an inserting part (2) having a vessel shape and a flange (3) extending from the end of said inserting part (2) wherein a cross-rib (21) is formed in the bottom surface of said inserting part (2) for reinforcement and a corrugated surface (31) is formed on the outer surface of said flange part (3) and further, a rim (32) is formed by the upper edge (32) of said flange being folded. The masking member is attached in a hole (5) of an article (4) by inserting said inserting part (2) into said hole (5) and after a surface treatment (6), said masking member (1) is removed by hooking said folded edge of said flange of said masking member (1) with a hook (7) and the like. Said hook may or may not also stick into the side of the flange. When said masking member (1) is removed by using said hook (7) as above described, the deformation of said masking member (1) is suppressed by the rib-effect of said corrugated surface (31) of said flange and said masking member (1) is removed effectively by using said hook (7).

Fig. 2



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The present invention relates to a new masking member used to protect the inside and circumference of a hole of an article from a surface treatment such as coating.

Hitherto, a masking member produced by the moulding of a plastic sheet or plastic foam sheet such as polyethylene sheet, polypropylene sheet, polystyrene sheet and the like in a vessel shape has been provided such as in Japanese application Jikkai Sho No. 62-202384, as shown in Fig. 3.

Said masking member (11) comprises an inserting part (12) and a flange (13) and said masking member (11) is inserted into a hole (15) of an article (14) to protect said hole (15) from a surface treatment.

Said masking member (11) is removed by sticking a hook (17) into the side of the flange (13) after said surface treatment, but if said masking member (11) is inaccurately stuck into by said hook (17), it is possible that said masking member (11) will not be removed correctly.

And also, since said masking member (11) is made of a thin plastic film, said masking member (11) is apt to deform when said masking member (11) is stuck into by the hook (17) and it is difficult to accurately stick said hook (17) into said masking member (11). Especially, in a case where a robot equipped with said hook (17) is used to remove said masking member (11) the above described disadvantage may be a very significant problem.

The present invention provides a masking member for masking a hole comprising an inserting part to be inserted in said hole and a flange extending from an end of said inserting part characterised by a rim extending at least partly around said flange.

The masking member may have a vessel shape and may be formed from a sheet.

The rim may be used when the masking member is removed by a tool.

Preferably at least part of the edge of said flange is folded thereby forming said rim.

An extending part of said flange may be shaped such that it extends away from the surface in which said hole is located when said masking member is inserted in said hole and the outer surface of said extending part may be corrugated.

The invention will be more clearly understood from the following description, given by way of example only, with reference to the accompanying drawings in which:-

Figs. 1 and 2 each show an embodiment of the present invention.

Fig. 1 is a perspective view of the masking member.

Fig. 2 is a side sectional view illustrating the removing of the masking member with the hook.

Fig. 3 is a side sectional view illustrating the removal of the masking member with the hook in the prior art.

The present invention is described with reference to the embodiments shown in Figs. 1 and 2. As shown in Fig. 1, a masking member (1) comprises an inserting part (2) having a vessel shape and a flange (3) extending from the end of said inserting part (2) wherein a cross-rib (21) is formed in the bottom surface of said inserting part (2) for reinforcement and a corrugated surface (31) is formed on the outer surface of said flange part (3) and further, a rim (32) is formed by the upper edge (32) of said flange being folded.

As shown in Fig. 2, a masking member (1) is attached in a hole (5) of an article (4) by inserting said inserting part (2) into said hole (5) and after a surface treatment (6), said masking member (1) is removed by hooking said folded edge of said flange of said masking member (1) with a hook (7) and the like. Said hook may or may not also stick into the side of the flange. When said masking member (1) is removed by using said hook (7) as above described, the deformation of said masking member (1) is suppressed by the rib-effect of said corrugated surface (31) of said flange and said masking member (1) is removed effectively by using said hook (7).

The surface treatment may for instance be painting or priming or the application of a protective coating for instance, on the underside of a car body where the holes are to be kept clear of the protective coating to make the subsequent use of the holes, e.g. for fixing fully accurate.

Said masking member (1) may be produced from a sheet, preferably by vacuum forming, and the sheet is preferably of a thermoplastic resin or is a sheet of a foamed thermoplastic resin such as polystyrene, polyethylene, polypropylene and the like. The member could be formed by the moulding of a fibre material such as pulp, polyamide fibre, polyester fibre, acrylic fibre, acetate fibre and the like wherein said fibre is bound by a binder such as melamine resin, urea resin, phenol resin and the like.

Further, an inorganic filler such as calcium carbonate, calcium sulfate, calcium phosphate, bentonite, talc, blast furnace slag may be mixed into the material of said masking member of the present invention.

As above described, the masking member of the present invention is removed effectively with a hook and the like. Accordingly, the automatic removal by a robot can be easily applied to the masking member of the present invention.

Claims

1. A masking member (1) for masking a hole (5) comprising an inserting part (2) to be inserted in said hole (5) and a flange (3) extending from an end of said inserting part (2) characterised by a rim (32) extending at least partly around said flange (3).

2. A masking member (1) according to claim 1, wherein said inserting part (2) has a vessel shape.

3. A masking member according to claim 1 or 2 wherein said rim (32) is for use in the removal of said masking member (1) from said hole by a tool (7).

4. A masking member according to any preceding claim, wherein said masking member is formed from a sheet.

5. A masking member (1) according to any preceding claim, wherein at least part of the edge of said flange (3) is folded thereby forming said rim (32).

6. A masking member (1) according to any preceding claim, wherein an extending part of said flange is shaped such that it extends away from the surface in which said hole is located when said masking member is inserted in said hole.

7. A masking member (1) according to any preceding claim, wherein the outer surface of said extending part of said flange is corrugated (31).

8. A method of masking a hole in a surface during a treatment of said surface by inserting a masking member (1) according to any preceding claim into said hole.

9. A method of treating a surface in which a hole is located including the steps of inserting a masking member (1) according to any of claims 1 to 7 into said hole, performing the surface treatment with the hole masked by the masking member and thereafter removing said masking member.

10. A method according to claim 8 or 9 wherein said masking member masks an area of said surface around said hole.

Fig. 1

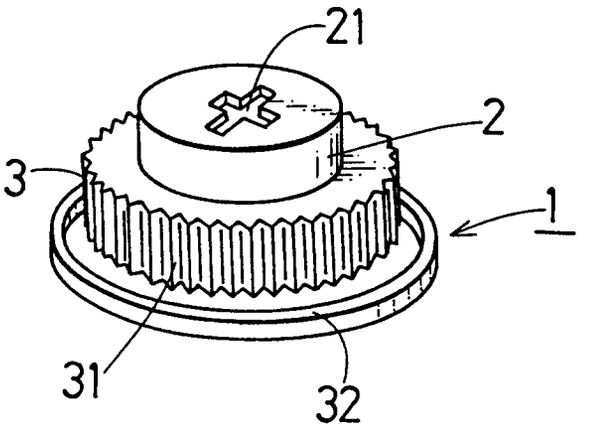


Fig. 2

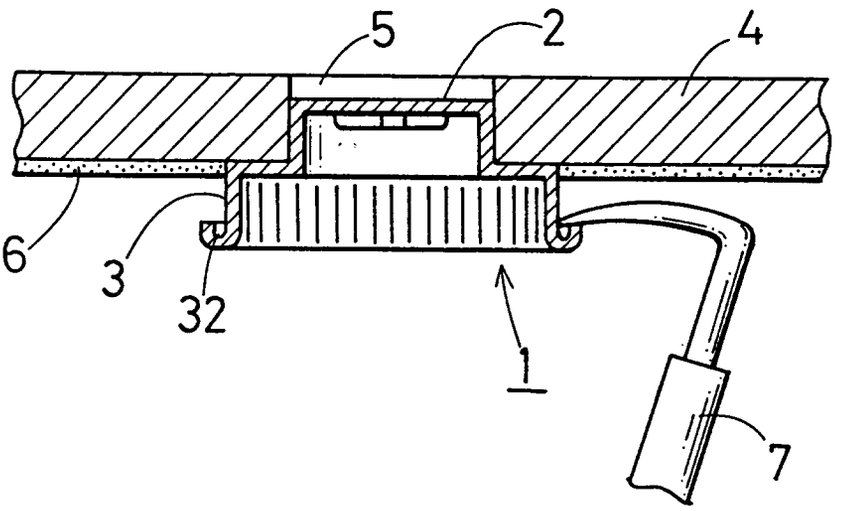
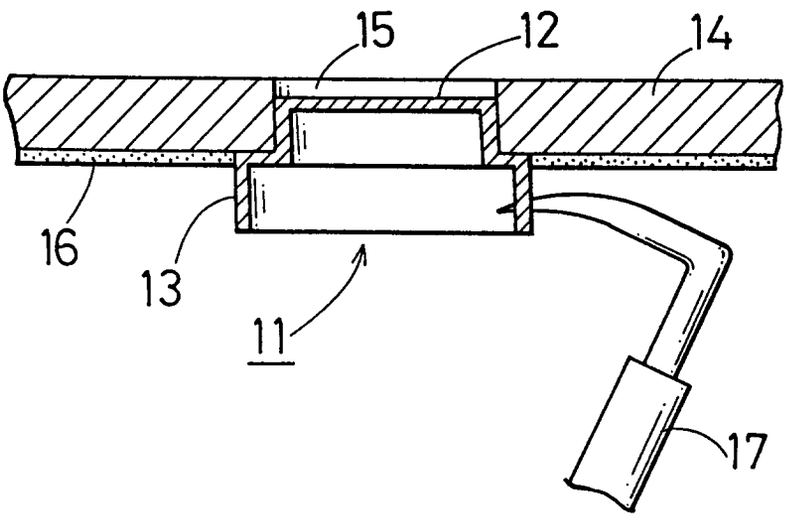


Fig. 3



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EUROPEAN SEARCH REPORT

Application Number

EP 93 30 0221

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.5)
X	EP-A-0 307 932 (NAGOYA OILCHEMICAL CO., LTD.) * column 21, line 1 - line 52; figures 44-46 *	1,2,4-6, 8-10	B05B15/04
X	EP-A-0 257 872 (NAGOYA OILCHEMICAL CO., LTD.) * abstract; figure 2 *	1,6,8-10	
A	EP-A-0 483 377 (NAGOYA OILCHEMICAL CO., LTD.) * column 3, line 49 - column 4, line 3; figures 1-5 *	3	

TECHNICAL FIELDS SEARCHED (Int. Cl.5)

B05B
B05C

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	17 MAY 1993	BREVIER F.J.

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
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O : non-written disclosure
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