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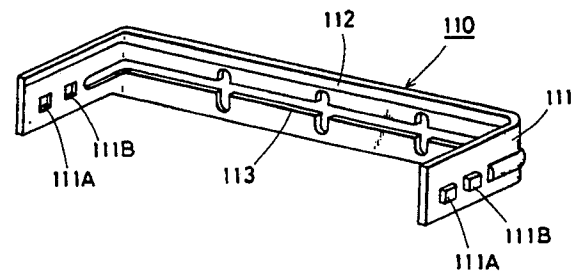
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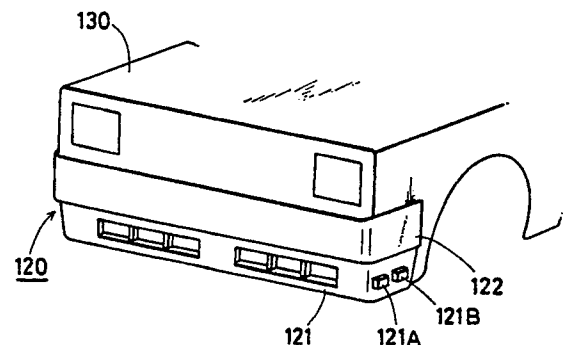
**Masking member.**

A masking member (110) produced by the molding of a sheet (111) having a shape corresponding with a part (121) of a surface of an article (120) to be protected from a surface treatment, wherein said masking member has (an) indentation(s) (111A) (111B) into which (a) projection(s) (121A) (121B) of said part is(are) inserted, is provided in the present invention. Said masking member is attached to said part of said surface by inserting said projection(s) of said part into said indentation(s) of said masking member to protect said part from a surface treatment such as coating, plating, and the like.

**Fig. 1**



**Fig. 2**



## MASKING MEMBER

### BACKGROUND OF THE INVENTION

The present invention relates to a masking member which protects a part of a surface of an article from a surface treatment such as coating, plating, vacuum evaporation, phosphatizing, and the like. More particularly, the present invention relates to a masking member produced by the molding of a sheet to have a shape corresponding with a part of a surface of an article to be protected from a surface treatment wherein said masking member has (an) indention(s) into which (a) projection(s) of said part is(are) inserted. When a surface treatment is effected on the surface of an article, and if said surface of said article has (a) part(s) on which said surface treatment should not be effected e.g. because a different surface treatment is effected on said part(s) or said surface treatment of said surface treatment spoils the appearance of said article and so on, said part(s) of said surface of said article may be covered and protected with said masking member.

### DESCRIPTION OF THE PRIOR ART

Hitherto, adhesive tape has been used as a masking member to protect a part of a surface of an article such as a bumper of an automobile and the like. Namely, the adhesive tape is attached to said part of said surface to protect said surface from said surface treatment and after said surface treatment, said adhesive tape is removed from said surface. Said surface was not affected by said surface treatment since said part of said surface was covered with said adhesive tape during said surface treatment.

Nevertheless, adhesive tape as a masking member has faults in that attaching and removing of the adhesive tape to/from said part of said surface takes time and has a high labor cost, and further, the adhesive tape attached to said part of said surface can be buried in the layer of said surface treatment and it is then difficult to find the end of said buried adhesive tape to remove said adhesive tape. Said faults of adhesive tape may seriously obstruct a mass-production line such as a coating line for automobiles.

### SUMMARY OF THE INVENTION

Accordingly, an object of the present invention is to save trouble when the masking member is attached/removed to/from a part to be protected.

According to the present invention, there is provided a masking member produced by the molding of a sheet having a shape corresponding with a part of a surface of an article to be protected from a surface treatment wherein said masking member has (an) indention(s) into which (a) projection(s) of said part is(are) inserted in use.

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

FIG. 1 to FIG. 4 relate to an embodiment of the present invention.

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

FIG. 2 is a partial perspective view of the front part of an automobile.

FIG. 3 is a partial perspective view of the front part of the automobile after coating.

FIG. 4 is a partial perspective view of the front part of the automobile after the masking member is removed from the bumper.

FIG. 5 and FIG. 6 relate to another embodiment of the present invention.

FIG. 5 is a perspective view of the masking member.

FIG. 6 is a cross sectional view showing that the masking member is attached to a part of a surface.

### DETAILED DESCRIPTION

The masking member of the present invention is made of a sheet such as from plastics or rubber such as polystyrene, polyethylene, polypropylene, ethylene-propylene copolymer, polyvinylchloride, polyvinylidene chloride, polymethacrylate, styrene-butadiene copolymer, acrylonitrile-butadiene copolymer, polybutadiene polyisoprene, polyisobutylene, polychloroprene, isoprene-isobutylene copolymer, natural rubber, polyurethane, melamine resin, urea resin, phenolresin, epoxyresin and the like; foams of said plastics; or said rubber; fiber sheet such as fabricrubber, knitting, non-woven fabric, paper, corrugated cardboard and the like; thermoplastic resin - impregnated fiber sheet; thermosetting resin - impregnated fiber sheet; wooden sheet such as wood board, hardboard, plywood and the like; metal sheet and the like; laminated sheet consisting of a plural number of sheets selected from the group of said sheets. In cases where said masking member is made of a sheet from plastics or rubber, it is desirable to mix inorganic filler such as calcium

carbonate, silica, talc, clay, bentonite, stone powder, blast furnace slag, flyash, and the like into said plastics or rubber since heat resistance, mechanical properties and the like of said masking member are improved by said inorganic filler and further, when a used masking member is burnt in a combustion furnace, a smaller combustion energy is produced so that said combustion furnace will stand long use. Usually, 10 to 500 weight parts, desirably 20 to 400 weight parts of said inorganic filler are mixed into said plastics. Further organic filler such as wood powder, organic, fiber powder, walnut powder, coconut powder, flour, chaff powder and the like may be mixed into said plastics or rubber. Still further, dyestuff, pigment, antioxidant, ultraviolet absorber plasticizer and the like may be mixed into said plastics or rubber. Polyolefin such as polyethylene, polypropylene and the like are desirable plastics for the material of the sheet of the masking member of the present invention since said polyolefin has high solvent resistance and is inexpensive, and of course, polyolefin in which said inorganic filler is mixed is a desirable material for said masking member. Polystyrene foam is also a desirable material for said masking member since said polystyrene foam is light and inexpensive, nevertheless, since said polystyrene foam has a low solvent resistance and a low heat resistance, it is desirable to laminate a suitable plastic or rubber onto said polystyrene foam.

Vacuum forming, press molding, casting, extrusion, injection, molding, paper making and the like may be used to produce the masking member of the present invention.

The masking member of the present invention is easily attached to a part of a surface of an article to be protected by inserting (a) projection(s) of said part into (an) indentation(s) of the masking member and said masking member is easily removed from said part by extracting said projection(s) of said part from said indentation(s) of said masking member. Accordingly, said masking member of the present invention can be correctly, easily, and securely attached to a part of a surface by the guide of said projection(s) of said part and said indentation(s) of said masking member.

Fig. 1 to Fig. 4 relate to an embodiment of the present invention. Referring now to Fig. 1 to Fig. 4, a masking member (110) is produced by the molding of a sheet (111) and has a shape corresponding with the surface of the lower half (121) of a bumper (120) of an automobile (130) and indentions (111A), (111B) are formed in both ends of said masking member (110) wherein projections (121A), (121B) in both ends of said lower half (121) of said bumper (120) are inserted into said indentions (111A), (111B) of said masking member (110). Further, a reinforcing rib (113) is formed in

said masking member (110) and an adhesive layer (112) is formed on the upper edge of the inside of said masking member (110).

Said masking member (110) is correctly, easily, and securely attached on said lower half (121) of said bumper (120) by inserting said projections (121A), (121B) of said bumper (120) into said indentions (111A), (111B) of said masking member (110) and adhering said adhesive layer (112) to the upper edge of said lower half (121) of said bumper (120), and then a paint (140) is coated on said bumper (120) as shown in Fig. 3. After said coating, said masking member (110) is easily removed from said bumper (120) and said paint (140) is not coated on said lower half (121) of said bumper (120) while said paint (140) is coated on the upper half (122) of said bumper (120) as shown in Fig. 4.

Fig. 5 and Fig. 6 relate to another embodiment of the present invention. Referring now to Fig. 5 and Fig. 6, a masking member (150) is produced by the molding of a sheet (151) and has a shape corresponding with a part (161) of the surface of the underside of an automobile, and a pair of indentions (151A), (151B) are formed in said masking member (150) wherein projections (161A), (161B) of said underside of said automobile are inserted into said indentions (151A), (151B) of said masking member (150).

Said masking member (150) is attached on said part (161) of said surface (160) of said underside of said automobile by inserting said projections (161A), (161B) of said part (161) of said surface (160) of the said underside of said automobile into said indentions (151A), (151B) of said masking member. In a case that the minimum diameters of said indentions (151A), (151B) of the masking member (150) are respectively a little smaller than the maximum diameters of said projections (161A), (161B) of said part (161), said projections (161A), (161B) are tightly inserted into said indentions (151A), (151B) and as the result, said masking member is securely attached to said part (161) without an adhesive layer. In this case, it is desirable that a laminated sheet consisting of a soft elastic sheet such as a soft-type polyvinylchloride foam sheet, soft-type polyurethane foam sheet, soft-type melamine resin foam sheet, foam rubber sheet, felt sheet and the like, and a rigid sheet such as a hard-type polyvinylchloride sheet, polystyrene sheet, polyethylene sheet, polypropylene sheet, resin-impregnated fiber sheet, hard-type paper, hard-type wooden sheet, metal sheet and the like is used as the material of said masking member (150). In said masking member (150), said soft elastic sheet is located inside said indentions (151A), (151B) and said rigid sheet is located outside said indentions (151A), (151B). Said surface (160) of said underside of said auto-

mobile is then coated with a paint. After said coating, said masking member (150) is removed from said part (161) of said surface (160).

## Claims

1. A masking member produced by the molding of a sheet having a shape corresponding with a part of a surface of an article to be protected from a surface treatment wherein said masking member has (an) indentation(s) into which (a) projection(s) of said part is(are) inserted in use. 10
2. A masking member in accordance with Claim 1, wherein said sheet is a polyolefin sheet. 15
3. A masking member in accordance with Claim 2, wherein said sheet is a polyolefin sheet in which an inorganic filler is mixed.
4. A masking member in accordance with Claim 3, wherein 10 to 500 weight parts of said inorganic filler is mixed in said polyolefin sheet. 20
5. A masking member in accordance with Claim 1, wherein said sheet is a fiber sheet.
6. A masking member in accordance with Claim 1, wherein said sheet is a laminated sheet consisting of a soft elastic sheet and a rigid sheet. 25
7. A masking member in accordance with any preceding claim wherein said masking member is used to protect the lower half of a bumper of an automobile. 30
8. A masking member in accordance with any preceding claim wherein said masking member is used to protect a part of a surface of the underside of an automobile.
9. A method of masking a part of a surface of an article which is to have a surface treatment wherein said part has at least one projection by applying to the part a masking member according to any preceding claim. 35
10. A method of surface treating an article wherein prior to surface treatment part of the surface is masked by the method of claim 9 and subsequent to such treatment the masking member is removed. 40

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Fig. 1

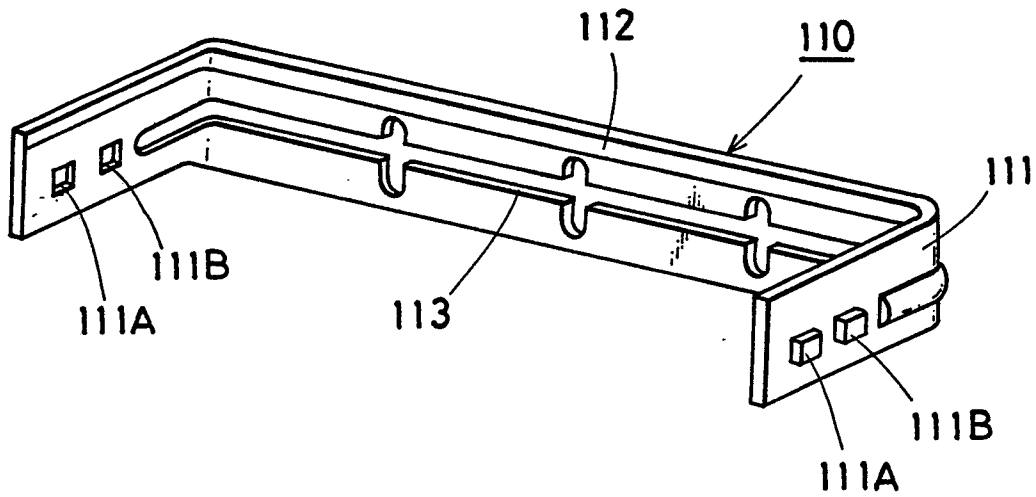


Fig. 2

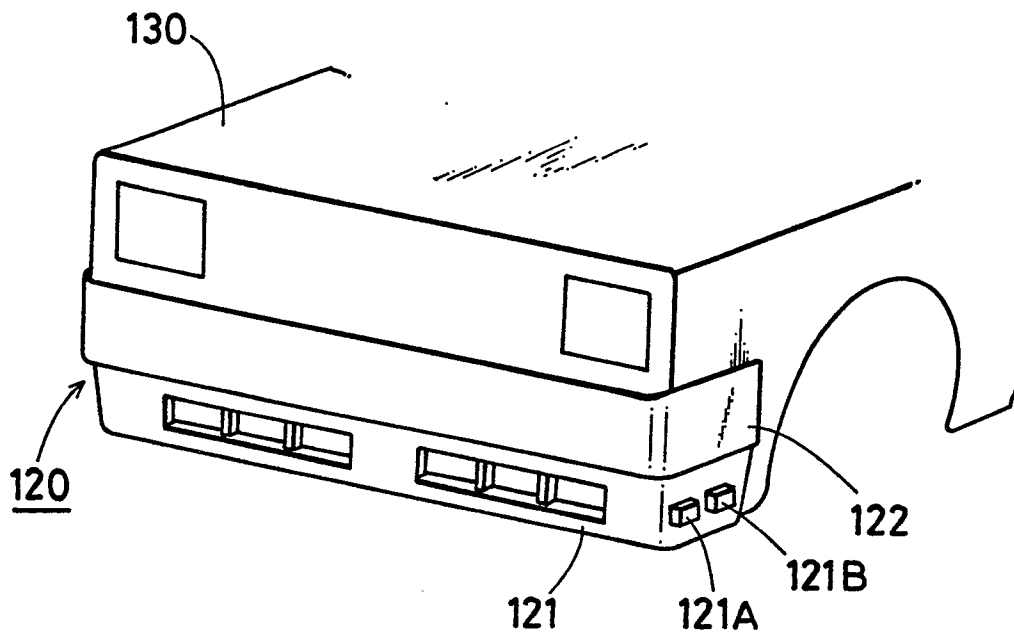


Fig. 3

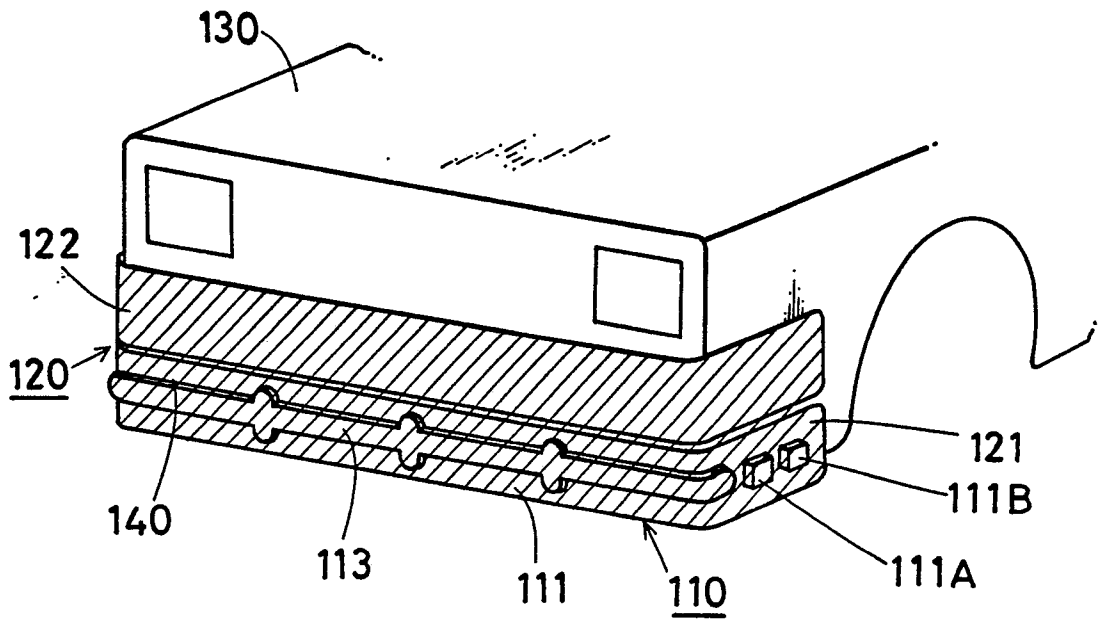


Fig. 4

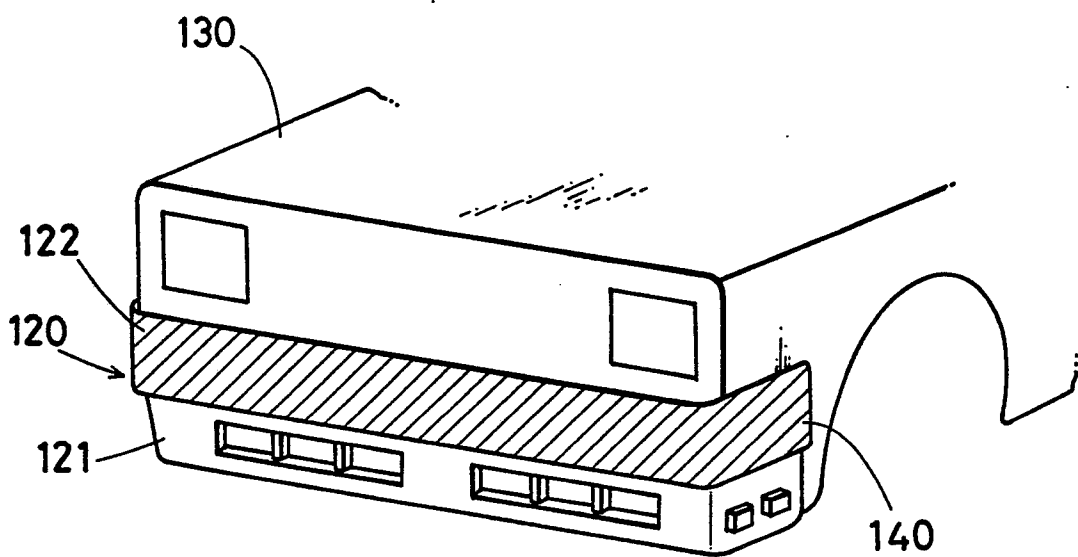


Fig. 5

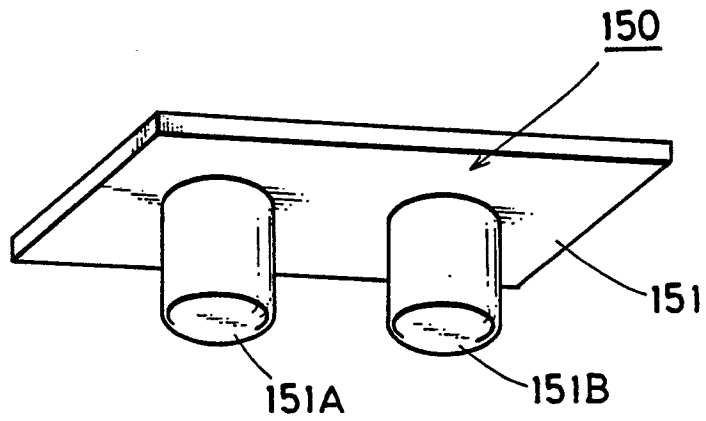
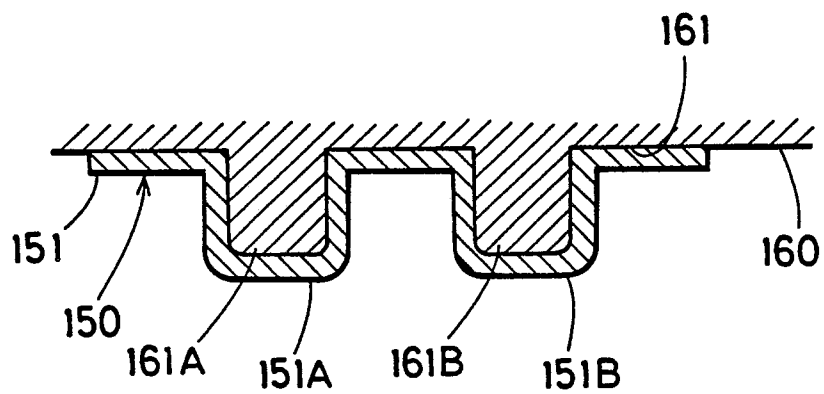


Fig. 6





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	PATENT ABSTRACTS OF JAPAN, vol. 7, no. 232 (C-190)[1377], 14th October 1983; & JP-A-58 123 897 (SUWA SEIKOSHA K.K.) 23-07-1983 * Abstract * ---	1,9,10	C 25 D 5/02 B 05 D 1/32 B 05 C 21/00
X	PATENT ABSTRACTS OF JAPAN, vol. 10, no. 23 (C-325)[2080], 29th January 1986; & JP-A-60 174 894 (CITIZEN TOKEI K.K.) 09-09-1985 ---	1,9,10	
A	US-A-4 358 482 (JUBELT) * Column 3, line 60 * ---		
A	GB-A-2 158 368 (HONDA) ---		
A	PATENT ABSTRACTS OF JAPAN, vol. 12, no. 148 (C-493)[2995], 7th May 1988; & JP-A-62 263 992 (HITACHI CABLE LTD) 16-11-1987 ---		
A	EP-A-0 256 782 (NAGOYA OILCHEMICAL CO.) -----		
The present search report has been drawn up for all claims			TECHNICAL FIELDS SEARCHED (Int. Cl.5)
			C 25 D C 23 C C 25 F B 05 D B 60 R B 05 C
Place of search	Date of completion of the search	Examiner	
THE HAGUE	16-05-1990	NGUYEN THE NGHIEP	
CATEGORY OF CITED DOCUMENTS		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons ..... & : member of the same patent family, corresponding document	
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