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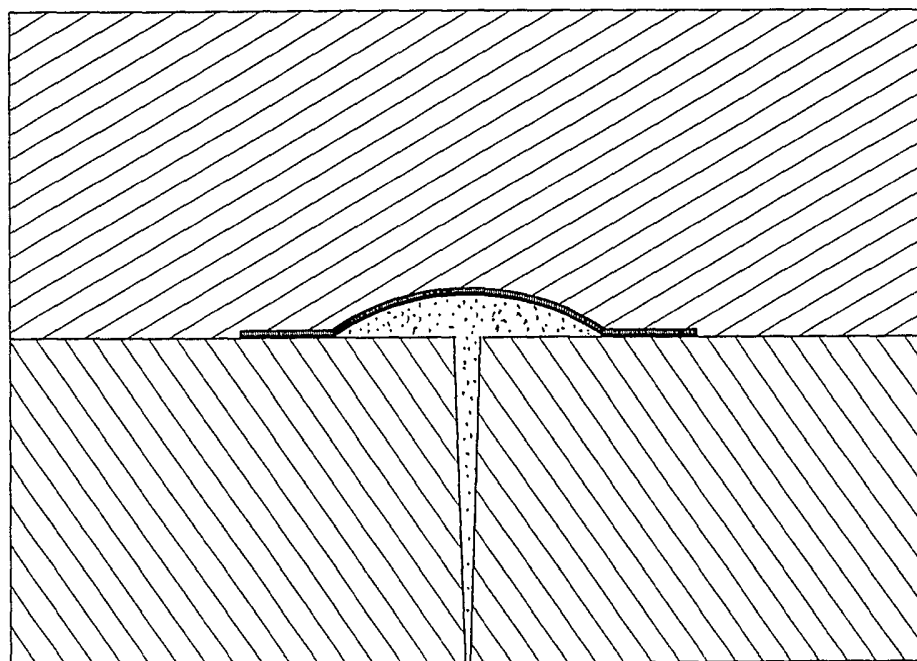
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- Published:  
— with international search report

[Continued on next page]

(54) Title: A PROCESS FOR THE MANUFACTURE OF A HYBRID ELEMENT COMPRISING A METAL SKIN



(57) Abstract: Hybrid metal-plastics elements are habitually manufactured by casting/moulding the resin into the rear side of a pressed metal shell. According to the invention, the hybrid element comprising an outer metal skin is manufactured in one step consisting of injection moulding, using the molten injection moulding material as the hydraulic fluid for hydroforming the shell.

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— *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

*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.*

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29 December 2005

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/DK 2005/000331

## A. CLASSIFICATION OF SUBJECT MATTER

IPC7: B29C 45/14

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: B29C

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

SE,DK,FI,NO classes as above

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

EPO-INTERNAL, WPI DATA, PAJ

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	FILE EPODOC/EPO, YOSHIDA KOGYO KK, "Manufacture of Synthetic Resin Molding Equipped with Decorative Metallic Plate and Molding Thereof", JP,A,61089817, 19860508 ---	1,2,4,6, 13-16
X	WO 2005042182 A1 (BEHR GMBH & CO. KG), 12 May 2005 (12.05.2005) ---	1-8,13-16
X	FR 1578138 A (LE BOUCHAGE MECANIQUE), 7 July 1969 (07.07.1969), page 3, line 5 - line 10; page 4, line 1 - line 4, abstract	1,2,4,6, 13-16
Y	---	7,8



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

"E" earlier application or patent but published on or after the international filing date

"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)

"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

"&amp;" document member of the same patent family

Date of the actual completion of the international search

15 November 2005

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# INTERNATIONAL SEARCH REPORT

International application No.  
PCT/DK2005/000331

## Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1.  Claims Nos.:  
because they relate to subject matter not required to be searched by this Authority, namely:
  
2.  Claims Nos.:  
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
  
3.  Claims Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

## Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1: Claims 1-8 directed to a procedure for the manufacture of a hybrid element comprising a metal skin and a polymer material, claim 13 directed to mould, claim 14-16 directed to a product.

2: Claims 9-11 directed to a procedure for the manufacture of a hybrid element comprising a metal skin and a second metal material.

1.  As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2.  As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3.  As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
  
4.  No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.: 1 - 8 , 13 - 16

### Remark on Protest

- The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.
- The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
- No protest accompanied the payment of additional search fees.

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/DK 2005/000331

## C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	DE 10024224 A1 (FRAUNHOFER-GESELLSCHAFT ZUR FÖRDERUNG DER ANGEWANDTEN FORSCHUNG E.V.), 6 December 2001 (06.12.2001), column 4, line 61 - column 5, line 10, abstract --	1,2,4,13
X	DE 2444267 A1 (ALLMÄNNA SVENSKA ELEKTRISKA AB), 3 April 1975 (03.04.1975), page 4, line 7 - line 16; page 5, line 11 - line 21 --	1-6,13-16
X	US 3952397 A (JOSEPH B. LOHR), 27 April 1976 (27.04.1976), abstract --	1-8
X	WO 03103923 A1 (PETRA ITALIA S.A.S. DI MARINA BORDO & C.), 18 December 2003 (18.12.2003), abstract --	1-8
X	File EPODOC/EPO, YOSHIDA KOGYO KK: "Insert parts and its forming", JP,A,56040523, 19810416 --	1-8
Y	File EPODOC/EPO, POLYPLASTIC CO: "Resin-Molded parts inserted with metal and manufacture thereof", JP,A,7329104, 19951219 --	7
Y	File EPODOC/EPO, POLYPLASTICS CO, "Method for Manufacturing metal insert resin composite molded article", JP,A,2001225352, 20010821 -- -----	8

## INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/DK 2005/000331

WO	2005042182	A1	12/05/2005	DE 102004050161	A	02/06/2005
FR	1578138	A	07/07/1969	NONE		
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				JP	50077465	A 24/06/1975
				SE	380203	B,C 03/11/1975
				SE	7312930	A 25/03/1975
US	3952397	A	27/04/1976	NONE		
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