

COMMONWEALTH OF AUSTRALIAPatents Act 1952DECLARATION IN SUPPORT OF A CONVENTION APPLICATION FOR A PATENT

In support of the Application made by REED PACKAGING LIMITED for a Patent for an invention entitled: "LIDDED CONTAINERS"

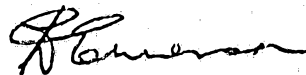
I, William Carmichael EMMERSON, of Cobdown House, London Road, Ditton, Maidstone, Kent ME20 6DQ, United Kingdom, do solemnly and sincerely declare as follows:

1. I am authorized by the Applicant for the Patent to make this declaration on its behalf.
2. The basic application as defined by section 141 of the Act was made in the U.K. on 12 January 1987 by REED PACKAGING LIMITED.
3. CHARLES WILLIAM BOXALL, OF 14 Woodlands Drive, Colsterworth, Near Grantham, Lincolnshire NG33 5JE, U.K., JOHN RICHARD CALVERT, of 13 Hemnall Street, Epping, Essex CM14 4AA, U.K., BRIAN EDWARDS, of 31 Trent Road, Oakham, Leicestershire LE15 6DX, U.K., MARTYN OMAR ROWLANDS, of Winchelsea House, High Road, Epping, Essex CM16 4AA, U.K. and CHRISTOPHER HOWARD SWORN, of 28 Main Street, Preston, Oakham, Leicestershire LE15 6DX, U.K., are the actual inventors of the invention and the facts upon which the Applicant is entitled to make the application are as follows:

"The Applicant is the Assignee of the invention from the said inventors under their respective terms of employment with the Applicant."

4. The basic application referred to in paragraph 2 of this Declaration was the first application made in a Convention country in respect of the invention, the subject of the application.

DECLARED at Maidstone, Kent, U.K., on this 16th day of December 1988.



.....
(William Carmichael Emmerson -
Technical Director)

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TO: The Commissioner of Patents,
COMMONWEALTH OF AUSTRALIA.

(12) PATENT ABRIDGMENT (11) Document No. AU-B-10816/88
(19) AUSTRALIAN PATENT OFFICE (10) Acceptance No. 598901

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LIDDED CONTAINERS

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(56) Prior Art Documents
US 3811597

(57) Claim

1. A lidded container made of plastics material, said container comprising a body with a top rim and a lid with a flange for sealing engagement inside said rim, characterised in that the lid has a web part carrying said flange, which depends therefrom, and a depending skirt also carried by the flange for surrounding the outside of the rim, said skirt having a plurality of inwardly-directed projections each engageable in latching relationship in a recess on the outside of the rim, and said web part having apertures corresponding to said projections, whereby a tool can be inserted through each aperture to disengage the corresponding projection from said recess.

PCT

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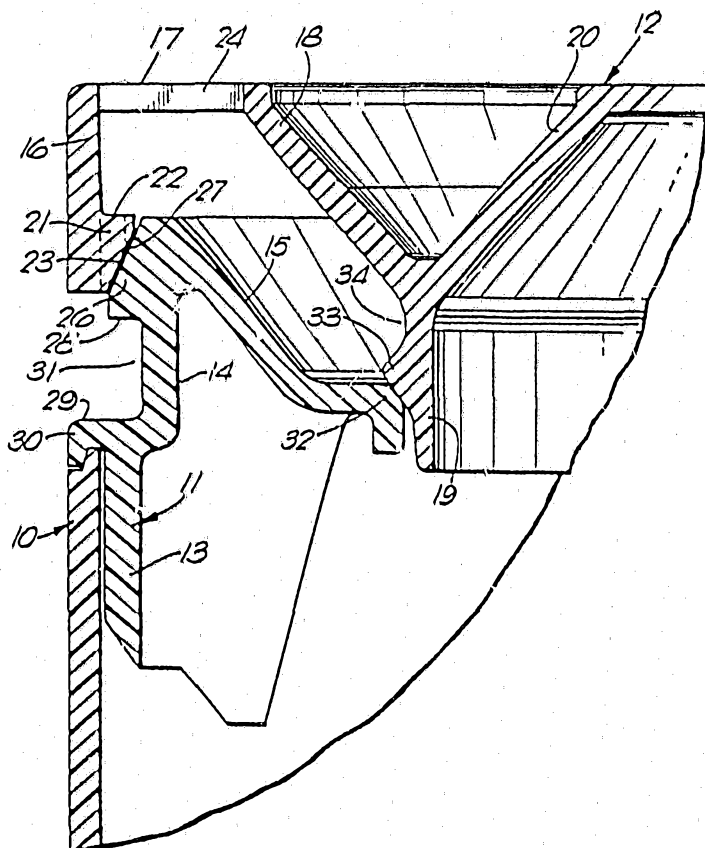
27 JUL 1988

PATENT OFFICE

(54) Title: LIDDED CONTAINERS

(57) Abstract

A lidded container made of plastics material comprises a body (10) with a top rim (11) and a lid (12) with a flange (18) for sealing engagement inside the rim (11). The lid (12) has a web (17) part carrying said flange (18), which depends therefrom, and also carrying a depending skirt (16) for surrounding the outside of the rim (11), said skirt (16) having a plurality of inwardly-directed projections (21) each engageable in latching relationship in a recess (31) on the outside of the rim (11), and said web part (17) having apertures (24) corresponding to said projections (21), whereby a tool can be inserted through each aperture (24) to disengage the corresponding projection (21) from said recess (31).



This document contains the amendments made under Section 49 and is correct for printing.

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LIDDED CONTAINERS

This invention is concerned with lidded containers, and relates particularly, but not exclusively, to lidded containers for paint.

Paint has conventionally been supplied in metal containers having metal lids which fit inside the tops of the containers. However, metal containers have various disadvantages, and in particular are liable to damage if subjected to impact, e.g. by dropping, during transit. Also, such impact may cause displacement of the lids, and, in order to minimise the risk of such displacement, it is necessary to provide clips or boxes to retain the lids. Unfortunately, such clips, (which are made as separate components), or boxes complicate the packaging operation, and involve substantial extra costs.

Making the containers of a plastics material instead of metal provides the possibility of significantly reducing the risk of impact damage. The desirability of providing means for minimising risk of displacement of the lids would, however, still exist, and the present invention seeks to deal with this by providing a plastics container having simple and effective lid-retaining means.

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According to the present invention, there is provided a lidded container made of plastics material, said container comprising a body with a top rim and a lid with a flange for sealing engagement inside said rim, characterised in that the lid has a web part carrying said flange, which depends therefrom, and ~~also carrying a~~ ^{also carried by the flange} depending skirt for surrounding the outside of the rim, said skirt having a plurality of inwardly-directed projections each engageable in latching relationship in a recess on the outside of the rim, and said web part having apertures corresponding to said projections, whereby a tool can be inserted through each aperture to disengage the corresponding projection from said recess.

Any suitable kind of plastics material may be employed, but the plastics material should be of a resiliently flexible nature. The plastics material should also be resistant to materials to be stored in the container. For example, if the container is for gloss paint, the plastics material should be resistant to the solvent in the paint. For this purpose, we have found that a polyester plastics material is particularly suitable.

The rim may be inwardly or outwardly projecting but preferably has an inwardly-directed flange, and it is against this flange that the lid's web-borne flange



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seats. The whole rim portion of the container may be made as a separate part, which is then securely mounted (by welding, say) on to the upper edge of the container body.

There are preferably at least three of the inwardly-directed projections, and (of course) a corresponding number of apertures.

Preferably, at each aperture said skirt has thinner and therefore weaker portions (e.g. provided by internal or external grooves) on each side of each projection, whereby leverage by said tool can cause the skirt to fracture and the part of the skirt between the thinner portions (together with the associated projection) to become detached from the lid.

The projections and the rim are preferably so formed that, when the lid is pressed on to the container body, the projections ride over a rib on the outside of the rim before entering said recess, but that the projections cannot ride over the rib in the reverse direction.

It will therefore be seen that the container has releasable lid-retaining or -latching means near the outside and sealing means between the lid and rim spaced inwardly from the lid retaining means.

The container can be of any shape and size, the rim portion (if separate) and the lid then matching this. Generally, however, it is most convenient - equally for paint containers - if the whole is eventually

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cylindrical, with the lid therefore annular and the rim annular.

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The following is a description, though only by way of example, of an embodiment of the invention, reference being made to the accompanying schematic drawings, in which

Fig. 1 is a sectional view through part of the top of a container with a lid resting thereon but not in its sealed position,

Fig. 2 is a sectional view similar to Fig. 1 but with the lid closed into its sealed position, and

Fig. 3 is a plan view, on a smaller scale, of part of the top of the lid.

The container shown in the drawings comprises three injection-moulded plastics components, namely a container body 10, a rim member 11 welded into the top of the container body so as to form part thereof, and a lid 12.

The body 10 is of cylindrical shape, and the rim member 11 is of annular form, having a lowermost flange 13 welded inside the top of the container, an upstanding flange 14, and an inwardly projecting flange 15.

The lid 12 is circular, and has an outer flange 16 depending from the outside of an annular web 17. An inclined inner flange 18 depends from the inside of the web 17. From the bottom of the flange 18, a sealing flange 19 extends downwards, and a central part 20 of the

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lid extends radially inwards. In the drawings, the central part 20 is shown with a domed configuration, but it could be of a different shape, e.g. it could be of flat disc-like configuration.

As best seen in conjunction with Figure 3, the outer flange 16 has a plurality (in practice, at least three) of internal projections 21 equally spaced circumferentially of the flange 16. Each projection 21 has an upper face 22 disposed in a plane normal to the lid axis, and an inclined lower face 23. The web 17 has apertures 24 at positions corresponding to the projections 21. Each aperture 24 extends circumferentially of the lid over and on each side of its corresponding projection 21. At each end of each aperture 24, the outer flange 16 is weakened throughout its depth by an internal groove 25 (see Fig. 3).

The rim flange 14 has an outwardly-extending annular rib 26 with an inclined upper face 27 and a lower face 28 disposed in a plane normal to the container axis. In conjunction with an upper face 29 on an external annular projection 30 on the rim members 11, the face 28 defines an annular recess 31 on the outside of the rim members.

The inwardly projecting flange 15 on the rim member is downwardly inclined for the greater part of its width, but terminates in a sealing portion 32 extending first radially and finally downwards.

The sealing flange 19 on the lid has an outwardly-

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extending annular protrusion 33 which is spaced below the flange 18 and which, together with the flange 18, defines an annular groove 34.

The manner in which the lid closes the container will be evident from a comparison of Figures 1 and 2. In Figure 1, the lid is simply lying on top of the rim member. To close the container, the lid is pressed down into the position of Figure 2. Owing to the inclined faces 23 and 27, and to the resilience of the plastics material, when the lid is pressed down the projections 21 ride over the rib 26, and the projections enter the recess 31. The faces 22 and 28 then positively prevent removal of the lid, except as hereinafter described. At the same time, the annular protrusion 33 rides over the sealing portion 32, which enters the groove 34 to provide sealing engagement between the lid and the rim member.

In order to remove the lid, a tool, such as a screwdriver, is inserted into the apertures 24, and used as a lever to break off the parts of the flange 16 between the grooves 25. Those parts take with them the projections 21, and the positive latched or locked relationship between the lid and the rim members ceases to exist. The tool is then inserted through one or more of the apertures 24 and between the flanges 15 and 18, and used as a lever to move the annular protrusion 33 up past the sealing portion 32, when the lid is free to be removed. The lid can, of course, be replaced, when the

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sealing arrangement (but not the locking arrangement) will be operative.

The provision of separate locking and sealing arrangements enables both to serve their desired purposes without conflict. The construction described can also be made without requiring specially complicated injection moulding tools.

Although the invention has been described herein in terms of containers for paint, there is, of course, no reason why the containers of this invention should not be used for any other materials that needs to be stored securely but releasably.

Claims

1. A lidded container made of plastics material, said container comprising a body with a top rim and a lid with a flange for sealing engagement inside said rim, characterised in that the lid has a web part carrying said flange, which depends therefrom, and a depending skirt also carried by the flange for surrounding the outside of the rim, said skirt having a plurality of inwardly-directed projections each engageable in latching relationship in a recess on the outside of the rim, and said web part having apertures corresponding to said projections, whereby a tool can be inserted through each aperture to disengage the corresponding projection from said recess.

2. A lidded container according to claim 1 characterised in that the rim has an inwardly-directed flange against which the flange of the lid seats.

3. A lidded container according to claim 1 or claim 2 characterised in that the container has a rim portion made as a separate part, which is mounted on the upper edge of the container body.

4. A lidded container according to any preceding claim characterised in that there are at least three of said inwardly-directed projections and a corresponding number of apertures.



5. A lidded container according to any preceding claim characterised in that at each aperture said skirt has thinner and therefore weaker portions on each side of each projection, whereby leverage by said tool can cause the skirt to fracture and the part of the skirt between the thinner portions, together with the associated projections, to become detached from the lid.

6. A lidded container according to any preceding claim characterised in that the projections and the rim are so formed that, when the lid is pressed on to the container body, the projections ride over a rib on the outside of the rim before entering said recess, but that the projections cannot ride over the rib in the reverse direction.

7. A lidded container substantially as hereinbefore described with reference to the accompanying drawings.



FIG. 1

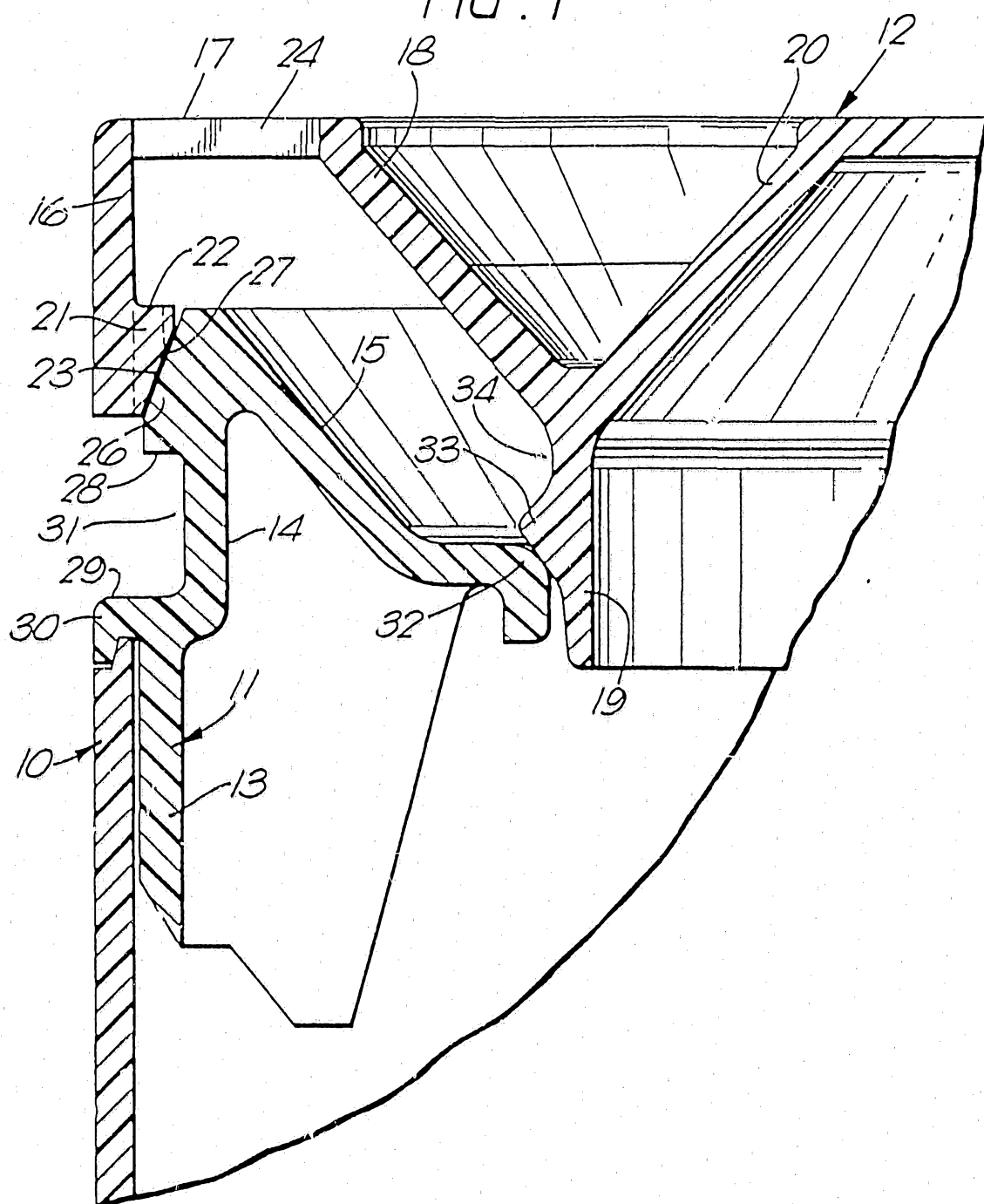


FIG. 2

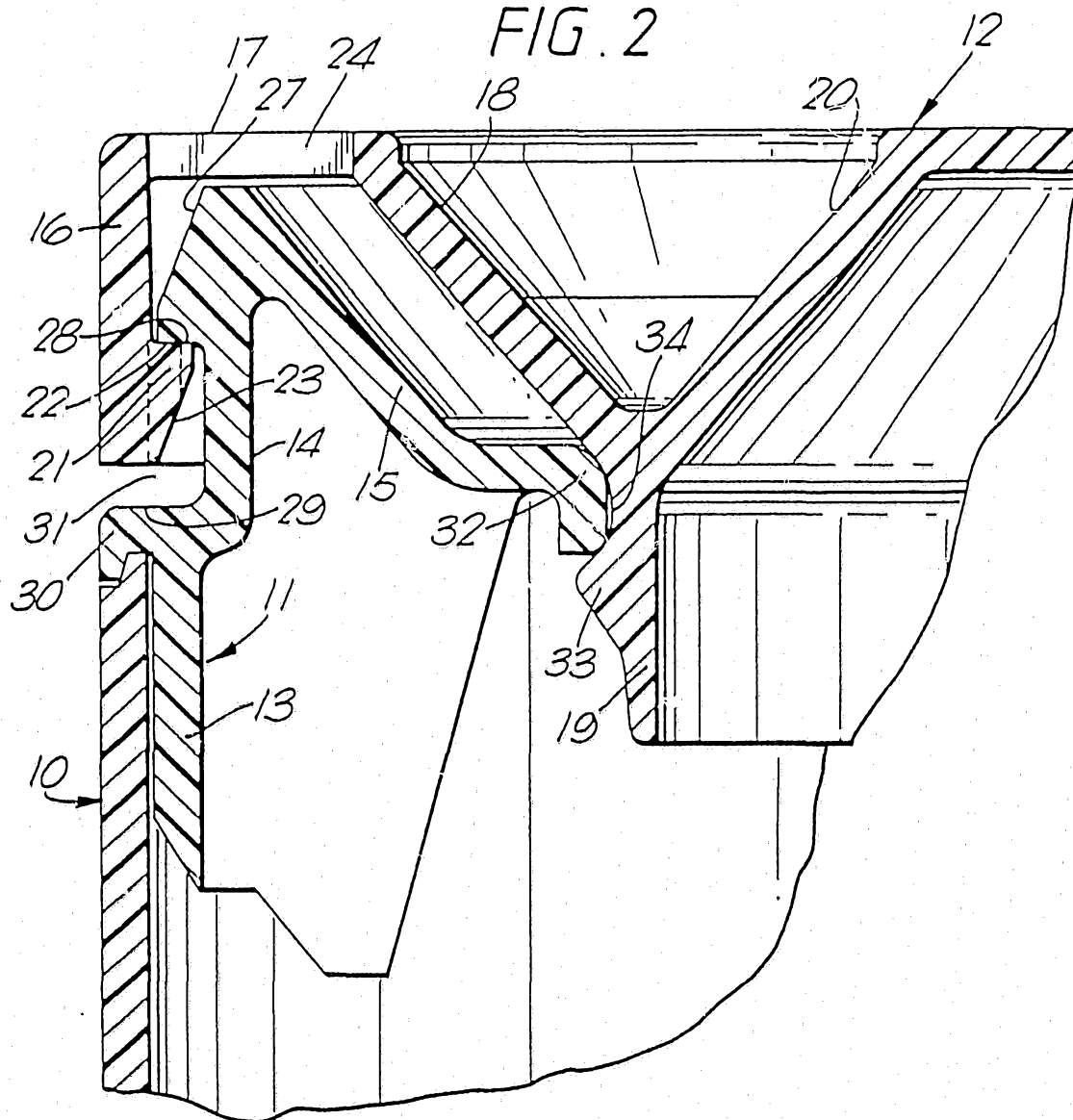
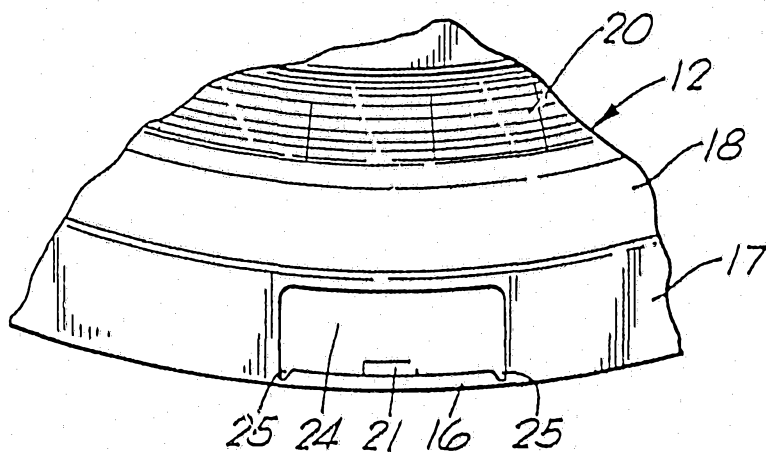


FIG. 3



INTERNATIONAL SEARCH REPORT

International Application No PCT/GB 88/00008

I. CLASSIFICATION OF SUBJECT MATTER (If several classification symbols apply, indicate all) *		
According to International Patent Classification (IPC) or to both National Classification and IPC		
IPC ⁴ : B 65 D 43/06		
II. FIELDS SEARCHED		
Minimum Documentation Searched *		
Classification System	Classification Symbols	
IPC ⁴	B 65 D	
Documentation Searched other than Minimum Documentation to the Extent that such Documents are Included in the Fields Searched *		
III. DOCUMENTS CONSIDERED TO BE RELEVANT *		
Category *	Citation of Document, ¹¹ with Indication, where appropriate, of the relevant passages ¹²	Relevant to Claim No. ¹³
X	FR, A, 2180819 (CONTINENTAL CAN) 30 November 1973 see page 3, line 20 - page 4, line 20; page 5, lines 19-34; figures 1, 2, 4, 7	1, 6, 7
Y	--	2-4
A	US, A, 3406817 (LANE) 22 October 1968 see column 4, lines 1-34; figures 3, 5-7	1
Y	--	4
Y	GB, A, 2096116 (NATIONAL PLASTICS) 13 October 1982 see page 2, lines 3-19; page 2, lines 77-90, figures 1-3	2, 3
A	US, A, 4165018 (GIGGARD) 21 August 1979 see column 2, line 43 - column 3, line 29, figures 1-3	5
A	GB, A, 2021532 (POLYSAR INC.) 5 December 1979	1
/.		
* Special categories of cited documents: ¹⁰ "A" document defining the general state of the art which is not considered to be of particular relevance "E" earlier document 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 "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. "A" document member of the same patent family		
IV. CERTIFICATION		
Date of the Actual Completion of the International Search	Date of Mailing of this International Search Report	
23rd March 1988	27 APR 1988	
International Searching Authority	Signature of Authorized Officer	
EUROPEAN PATENT OFFICE	P.C.G. VAN DER PUTTEN	

III. DOCUMENTS CONSIDERED TO BE RELEVANT (CONTINUED FROM THE SECOND SHEET)

Category *	Citation of Document, with indication, where appropriate, of the relevant passages	Relevant to Claim No
	see page 3, line 4 - page 4, line 27; figures 1-9 --	
A	US, A, 4530442 (VOGEL) 23 July 1985 see figures 1-3 --	2,3
A	FR, A, 1194685 (TANGUY) 12 November 1959 see page 1, left-hand column, line 15 - page 1, right-hand column, line 22; figures 1-10 --	1
A	DE, U, 8616755 (WERKZEUGBAU W. GEYER) 2 October 1986 see figures 1,2 -----	1

ANNEX TO THE INTERNATIONAL SEARCH REPORT
ON INTERNATIONAL PATENT APPLICATION NO.

GB 8800008

SA 20196

This annex lists the patent family members relating to the patent documents cited in the above-mentioned international search report.
The members are as contained in the European Patent Office EDP file on 20/04/88
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
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