

AUSTRALIA

PATENTS ACT 1990

NOTICE OF ENTITLEMENT

We, REBOUL-SMT of Rue des Terrasses, 74961 Cran Gevrier, France, being the applicant and nominated person in respect of Application No. 49643/93, state the following:-

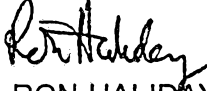
The person nominated for the grant of the patent has entitlement from the actual inventor THÉO DERRIEN by virtue of the following:

The said inventor assigned his rights in the invention
to REBOUL-SMT

The person nominated for the grant of the patent has entitlement from the applicant of the application listed in the declaration under Article 8 of the PCT by virtue of the following:

The said inventor assigned the right to claim priority in
respect of the invention to AEROSOL INVENTIONS
AND DEVELOPMENT SA who, in turn, assigned that
right to REBOUL-SMT.

The basic application listed in the declaration made under Article 8 of the PCT is the first application made in a Convention country in respect of the invention

REBOUL-SMT
By their Patent Attorneys
CULLEN & CO.

RON HALIDAY

Date: 30 June 1997



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(19) AUSTRALIAN PATENT OFFICE (10) Acceptance No. 681599

- (54) Title
LOCKABLE PUSHBUTTON-DISTRIBUTOR FOR AEROSOL VALVE
- (51)⁶ International Patent Classification(s)
B65D 083/22 B65D 047/06 B65D 050/00
- (21) Application No. : 49643/93 (22) Application Date : 23.08.93
- (87) PCT Publication Number : WO94/05564
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- (31) Number (32) Date (33) Country
92 10749 09.09.92 FR FRANCE
- (43) Publication Date : 29.03.94
- (44) Publication Date of Accepted Application : 04.09.97
- (71) Applicant(s)
REBOUL-SMT
- (72) Inventor(s)
THEO DERRIEN
- (74) Attorney or Agent
CULLEN & CO , GPO Box 1074, BRISBANE QLD 4001
- (56) Prior Art Documents
EP 409497
EP 119084
US 3143254

(57) Claim

1. Lockable dispenser button for aerosol valves including a one-piece body whose base (3) includes means (14-15) for fixing it to an aerosol container (12) and the upper part (4) of which is articulated to the base by a flexible tongue defined by a cut-out (6) in the wall of the body and includes at the side a dispenser nozzle (7) located above the articulation tongue and connected to an axial tube (10) connected to ~~the~~ hollow actuator and dispenser rod (11) of ~~the~~ valve, which dispenser button is characterised in that the upper part (4) of its body (1) is surrounded by a ring (2) which is free to rotate but which is prevented from axial movement in translation and is extended radially by a manual operating lever (18) and in that the edge (21) of the ring towards the base of the body is inclined, the ring being shorter on the side in vertical alignment with the lever, whereas its longer side, diametrically opposite the lever, is in the immediate vicinity of a circular shoulder (5) on the outside wall of the base (3) of the body so that when, by rotating the

(11) AU-B-49643/93

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ring, the lever is moved to the side opposite the nozzle it can be depressed to operate the valve by inclining the upper part of the body on the base by virtue of the articulation tongue located under the nozzle and because the ring is shorter on the side under the lever whereas, if the lever is on the same side as the nozzle, it cannot be depressed because the articulation tongue is then under the lever and the longer side of the ring is abutted against the shoulder on the base, opposite the lever, so that the dispenser button is immobilised in this position to prevent unintentional actuation of the valve.



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DEMANDE INTERNATIONALE PUBLIEE EN VERTU DU TRAITE DE COOPERATION EN MATIERE DE BREVETS (PCT)

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(21) Numéro de la demande internationale: PCT/FR93/00822 (22) Date de dépôt international: 23 août 1993 (23.08.93) (30) Données relatives à la priorité: 92/10749 9 septembre 1992 (09.09.92) FR (71) Déposant (pour tous les Etats désignés sauf US): REBOUL-SMT [FR/FR]; Rue des Terrasses, F-74961 Cran Gevrier (FR). (72) Inventeur; et (75) Inventeur/Déposant (US seulement): DERRIEN, Théo [FR/FR]; 26, rue Eugène-Courel, F-94500 Champigny (FR). (74) Mandataire: BERTRAND, Didier; S.A. Fedit-Loriot & Autres, Conseils en Propriété Industrielle, 38, avenue Hoche, F-75008 Paris (FR).		(81) Etats désignés: AU, CA, JP, NZ, US, brevet européen (AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE). Publiée <i>Avec rapport de recherche internationale.</i>

68 1 599

(54) Title: LOCKABLE PUSHBUTTON-DISTRIBUTOR FOR AEROSOL VALVE

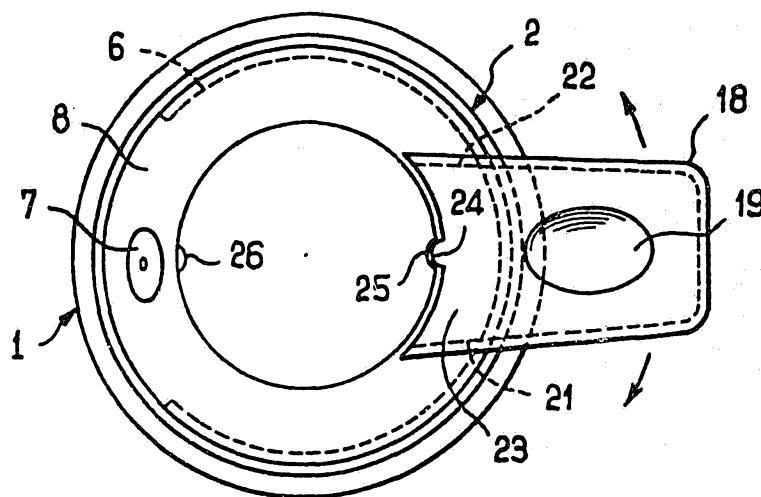
(54) Titre: POUSSOIR-DISTRIBUTEUR VERROUILLABLE POUR VALVE AEROSOL

(57) Abstract

Pushbutton-distributor characterized in that the upper part (4) of its body (1) is surrounded by a ring (2) which is free to rotate but which is wedged in axial translation, and radially extended by a manual actuation lever (18), and in that the edge (21) of the ring on the side of the body base is diametrically inclined, the ring being shorter below the lever, while the longer side, diametrically opposite to the lever, is in the immediate vicinity of a circular shoulder (5) of the external wall of the base (3) of the body.

(57) Abrégé

Poussoir-distributeur caractérisé en ce que la partie supérieure (4) de son corps (1) est entourée par un anneau (2), libre en rotation mais calé en translation axiale, prolongé radialement par un levier (18) d'actionnement manuel, et en ce que la tranche (21) de l'anneau du côté de la base du corps est inclinée diamétralement, l'anneau étant plus court à l'aplomb du levier, tandis que son côté le plus long, diamétralement opposé au levier, vient au voisinage immédiat d'un épaulement (5) circulaire de la paroi extérieure de la base (3) du corps.



LOCKABLE DISPENSER BUTTON FOR AEROSOL VALVES

The present invention concerns the industrial packaging of pressurised fluids in "aerosols" and more particularly the dispensing buttons for operating the valve of such packaging.

To prevent accidental or unintentional operation of the valve of an aerosol the button is usually protected by a cap that the user must remove to obtain access to the button. A problem arises in that the user must hold the cap in their hand or put it down on a table or some other support during use, with the risk of the cap being damaged or overlooked. Devices have been proposed in which the button rotates on a support fixed to the container and in which it can slide axially in only one predetermined angular position. This has the drawback of leaving the dispensing nozzle of the button constantly exposed to external soiling and often complicates the operation of fitting the button in packaging lines, especially if the position of the button nozzle jet has to be indexed relative to the container.

An object of the invention is to overcome the drawbacks of conventional dispenser buttons and to provide packaging in which the nozzle is protected from external pollution and the valve cannot be operated between intentional usages, without there being any cap or other part to be removed to obtain access to the button and without requiring any specific precautions when fitting the dispenser button to the container equipped with its valve.

The invention consists in a lockable dispenser button for aerosol valves including a one-piece body whose base includes means for fixing it to an aerosol container and the upper part of which is articulated to the base by a flexible tongue defined by a cut-out in the wall of the body and includes at the side a dispenser

nozzle located above the articulation tongue and connected to an axial tube connected to the hollow actuator and dispenser rod of the valve, which dispenser button is characterised in that the upper part of its
5 body is surrounded by a ring which is free to rotate but which is prevented from axial movement in translation and is extended radially by a manual operating lever and in that the edge of the ring towards the base of the body is inclined, the ring being shorter on the side in vertical
10 alignment with the lever, whereas its longer side, diametrically opposite the lever, is in the immediate vicinity of a circular shoulder on the outside wall of the base of the body so that when, by rotating the ring, the lever is moved to the side opposite the nozzle it can
15 be depressed to operate the valve by inclining the upper part of the body on the base by virtue of the articulation tongue located under the nozzle and because the ring is shorter on the side under the lever whereas, if the lever is on the same side as the nozzle, it cannot
20 be depressed because the articulation tongue is then under the lever and the longer side of the ring is abutted against the shoulder on the base, opposite the lever, so that the dispenser button is immobilised in this position to prevent unintentional actuation of the
25 valve.

To protect the nozzle, the ring and the lever preferably have extensions forming a nut in front of the nozzle in the locked position of the dispenser button.

30 In most applications sufficient movement to operate the valve is obtained if the edge of the ring is inclined at approximately 7° to the axis of the ring.

In one embodiment of the invention the axis of the nozzle is inclined at approximately 120° to the axis of the upper part of the body, the nozzle discharging
35 normally onto an end frustoconical wall of the upper part

of the body.

To prevent the user from having to position the lever by trial and error, the ring and the upper part of the body advantageously carry complementary indexing means of the elastic lug and notch type for locating the lever carried by the ring on the same side as the nozzle in the locked position and on the opposite side to the nozzle in the operative position.

The invention also consists in pressurised packaging of the "aerosol" type fitted with a lockable dispenser button in accordance with the invention.

The invention will be better understood from an examination of and the detailed description of the appended drawings which show one embodiment of the invention selected by way of example only from many possible embodiments, adaptations and variants of the invention that will suggest themselves to the person skilled in the art.

In the drawings:

Figure 1 is a diagrammatic view in elevation and in axial section of a dispenser button in accordance with the invention in its locked position;

Figure 2 is a view analogous to that of figure 1 of the same dispenser button in its operative position; and

Figure 3 is a diagrammatic top view of the same dispenser button.

The same components are identified by the same reference numbers in all the figures. To simplify the drawings the respective dimensions and proportions of these components are not necessarily to scale.

The dispenser button of the invention shown in the drawings is in two parts moulded from a plastics material such as polypropylene and nesting one within the other, namely a body 1 and a ring 2.

The body has a base 3 and an upper part 4

articulated to a circular shoulder 5 at the top of the base by an elastic tongue delimited by a circuit arc shape cut-out 6. Above this tongue the upper part 4 of the body includes a dispenser nozzle 7 discharging normally onto a frustoconical wall 8 at the end of this upper part. The nozzle 7 is connected by a passage 9 inclined at approximately 120° to an axial tube 10 connected to the hollow actuator and dispenser rod 11 of the valve of an aerosol packaging container 12. The rod 11 is shown in dashed outline in figure 2. The tube 10 is reinforced by radial fins 13, 13'. The inside of the base 3 includes a marginal bead 14 and radial fins 15a-15e which snap over the marginal lateral part of the top of the container 12 (figure 2) to fasten the body 1 to the container.

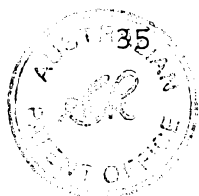
The ring 2 pivots freely about the upper part 4 of the body 1 but is locked against axial movement because an internal circumferential rib 16 on the ring clips into an external circumferential groove 17 on the cylindrical side wall 18 of the upper part 4 of the body 1. The ring 2 is extended in the radial direction by a manual operating lever 18 which includes a depression 19 on which the finger 20 of the user rests (figure 2). The edge 21 of the ring facing the shoulder 5 on the base 3 is inclined at approximately 7° to the axis of the ring so that the edge of the shorter side of the ring is below the lever 18 at a distance from the shoulder 5 and the edge of the longer side of the ring diametrically opposite the lever is in the immediate proximity of the shoulder 5 which therefore forms an abutment. The lever 18 has two sides 21, 22 and a top 23 which, in conjunction with an extension of the wall of the ring beyond the rib 16, surrounds the nozzle 7 in the locked position (figure 1) and so protect it from external pollution. The plate 23 incorporates an axial lug 24 which cooperates with two

diametrically opposed notches 25, 26 at the top of the upper part 4 of the body for clear indexing of the lever and consequently of the ring in either the locked position (figure 1) or the operative position (figures 2 and 3).

CLAIMS

1. Lockable dispenser button for aerosol valves including a one-piece body whose base (3) includes means (14-15) for fixing it to an aerosol container (12) and the upper part (4) of which is articulated to the base by a flexible tongue defined by a cut-out (6) in the wall of the body and includes at the side a dispenser nozzle (7) located above the articulation tongue and connected to an axial tube (10) connected to ~~the~~^a hollow actuator and dispenser rod (11) of ~~the~~^a valve, which dispenser button is characterised in that the upper part (4) of its body (1) is surrounded by a ring (2) which is free to rotate but which is prevented from axial movement in translation and is extended radially by a manual operating lever (18) and in that the edge (21) of the ring towards the base of the body is inclined, the ring being shorter on the side in vertical alignment with the lever, whereas its longer side, diametrically opposite the lever, is in the immediate vicinity of a circular shoulder (5) on the outside wall of the base (3) of the body so that when, by rotating the ring, the lever is moved to the side opposite the nozzle it can be depressed to operate the valve by inclining the upper part of the body on the base by virtue of the articulation tongue located under the nozzle and because the ring is shorter on the side under the lever whereas, if the lever is on the same side as the nozzle, it cannot be depressed because the articulation tongue is then under the lever and the longer side of the ring is abutted against the shoulder on the base, opposite the lever, so that the dispenser button is immobilised in this position to prevent unintentional actuation of the valve.

2. Dispenser button according to claim 1 characterised in that the wall of the ring (2) and the lever (18) have extensions (21, 22, 23) forming a screen



in front of the nozzle (7) when the dispenser button is in its locked position.

3. Dispenser button according to claim 1 or claim 2 characterised in that the edge (21) of the ring (2) is inclined to the axis of the ring at approximately 7° .

4. Dispenser button according to any one of claims 1 to 3 characterised in that the axis of the nozzle (7) is inclined to the axis of the upper part (4) of the body at approximately 120° , the nozzle discharging normally onto a frustoconical wall (8) at the end of the upper part of the body.

5. Dispenser button according to any one of claims 1 to 4 characterised in that the ring (2) and the upper part (4) of the body carry complementary indexing means of the elastic lug/notch type (24, 25, 26) for locating the lever (18) carried by the ring on the same side as the nozzle (7) in the locked position, and on the opposite side to the nozzle in the operative position.

6. Aerosol packaging characterised in that it includes a dispenser button in accordance with any one of claims 1 to 5.

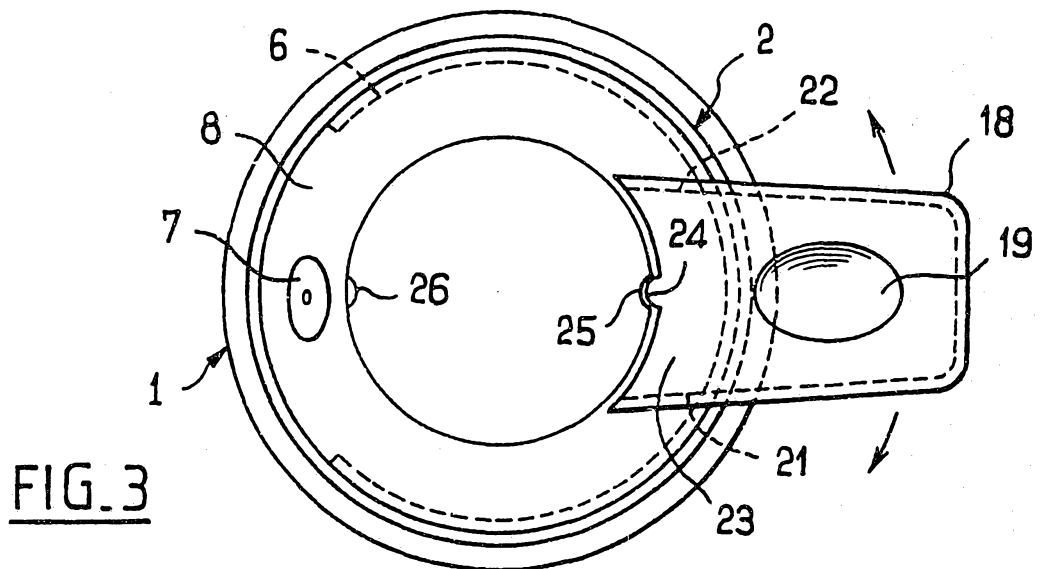
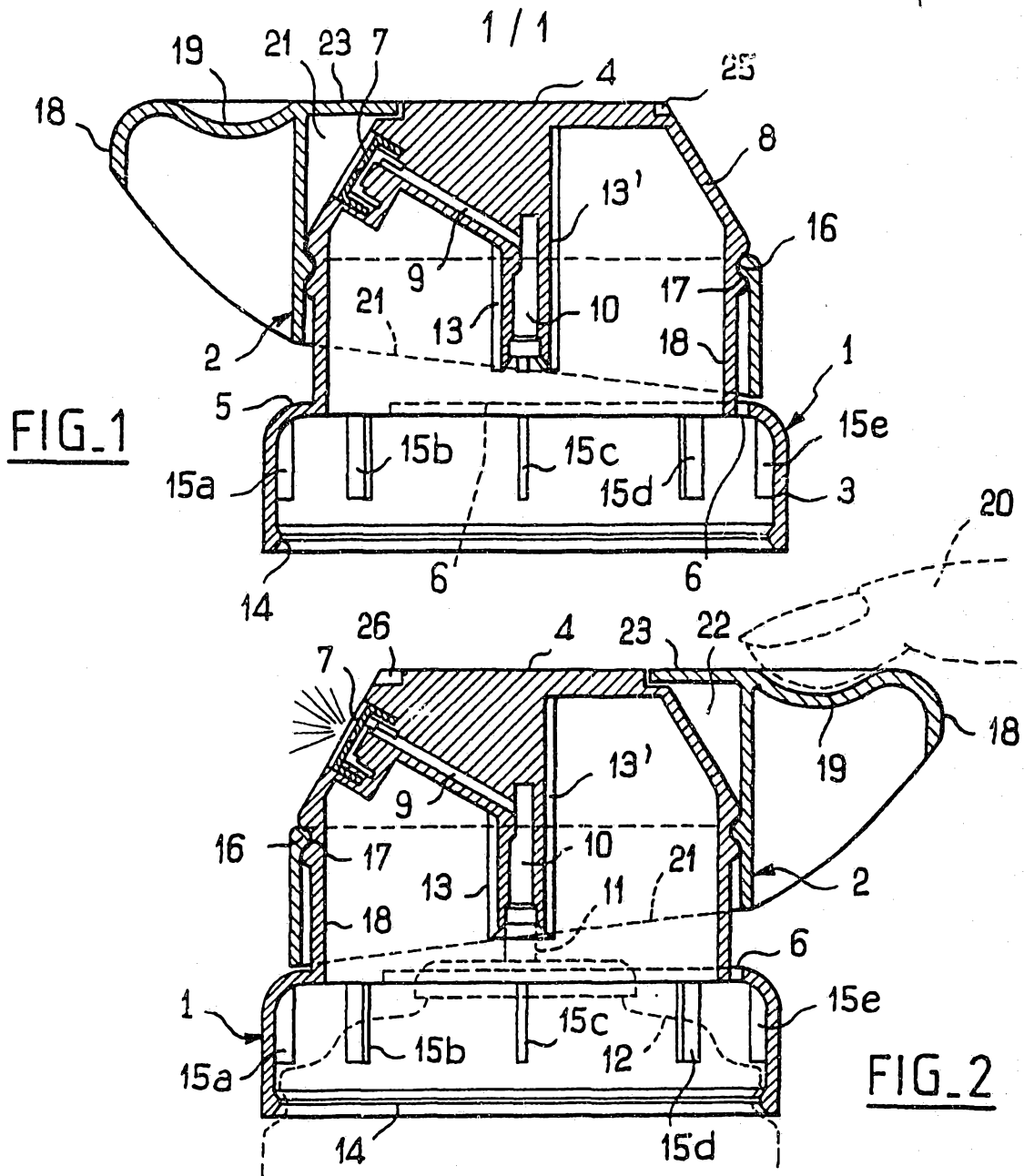
A B S T R A C T

LOCKABLE DISPENSER BUTTON FOR AEROSOL VALVES

Dispenser button characterised in that the upper part (4) of its body (1) is surrounded by a ring (2) free to rotate but prevented from axial movement in translation, extended radially by a manual operating lever (18), and in that the edge (21) of the ring at the base of the body is inclined, the ring being shorter in vertical alignment with the lever, whereas its longer side, diametrically opposite the lever, is in the immediate vicinity of a circular shoulder (5) on the outside wall of the base (3) of the body.

Figure 2.

49 643 / 93



INTERNATIONAL SEARCH REPORT

International application No.

PCT/FR 93/00822

A. CLASSIFICATION OF SUBJECT MATTER

IPC 5 B65D83/22

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)

IPC 5 B65D; B05B

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

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

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	EP,A,0 119 084 (METAL BOX) 19 September 1984 see the whole document ---	1,6
A	EP,A,0 409 497 (TIRAM KIMIA SDN BHD) 23 January 1991 see the whole document ---	1,6
A	US,A,3 143 254 (VANDERHYDE) 4 August 1964 see figures 1-3 ---	1,6

☐ 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 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 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

"&" document member of the same patent family

Date of the actual completion of the international search

15 November 1993 (15.11.93)

Date of mailing of the international search report

2 December 1993 (02.12.93)

Name and mailing address of the ISA/

EUROPEAN PATENT OFFICE

Facsimile No.

Authorized officer

Telephone No.

RAPPORT DE RECHERCHE INTERNATIONALE

Demande internationale No

PCT/FR 93/00822

I. CLASSEMENT DE L'INVENTION (si plusieurs symboles de classification sont applicables, les indiquer tous) ⁷		
Selon la classification internationale des brevets (CIB) ou à la fois selon la classification nationale et la CIB		
CIB 5 B65D83/22		
II. DOMAINES SUR LESQUELS LA RECHERCHE A FORTE		
Documentation minimale consultée ⁸		
Système de classification	Symboles de classification	
CIB 5	B65D ; B05B	
Documentation consultée autre que la documentation minimale dans la mesure où de tels documents font partie des domaines sur lesquels la recherche a porté		
III. DOCUMENTS CONSIDERES COMME PERTINENTS ¹⁰		
Catégorie ⁹	Identification des documents cités, avec indication, si nécessaire, ¹² des passages pertinents ¹³	No. des revendications visées ¹⁴
A	EP,A,0 119 084 (METAL BOX) 19 Septembre 1984 voir le document en entier ---	1,6
A	EP,A,0 409 497 (TIRAM KIMIA SDN BHD) 23 Janvier 1991 voir le document en entier ---	1,6
A	US,A,3 143 254 (VANDERHYDE) 4 Août 1964 voir figures 1-3 -----	1,6
¹¹ Catégories spéciales de documents cités: "A" document définissant l'état général de la technique, non considéré comme particulièrement pertinent "E" document antérieur, mais publié à la date de dépôt international ou après cette date "L" document pouvant jeter un doute sur une revendication de priorité ou cité pour déterminer la date de publication d'une autre citation ou pour une raison spéciale (telle qu'indiquée) "O" document se référant à une divulgation orale, à un usage, à une exposition ou tous autres moyens "P" document publié avant la date de dépôt international, mais postérieurement à la date de priorité revendiquée "T" document ultérieur publié postérieurement à la date de dépôt international ou à la date de priorité et n'appartenant pas à l'état de la technique pertinent, mais cité pour comprendre le principe ou la théorie constituant la base de l'invention "X" document particulièrement pertinent; l'invention revendiquée ne peut être considérée comme nouvelle ou comme impliquant une activité inventive "Y" document particulièrement pertinent; l'invention revendiquée ne peut être considérée comme impliquant une activité inventive lorsque le document est associé à un ou plusieurs autres documents de même nature, cette combinaison étant évidente pour une personne du métier. "A" document qui fait partie de la même famille de brevets		
IV. CERTIFICATION		
Date à laquelle la recherche internationale a été effectivement achevée		Date d'expédition du présent rapport de recherche internationale
15 NOVEMBRE 1993		1993.11.15
Administration chargée de la recherche internationale		Signature du fonctionnaire autorisé
OFFICE EUROPEEN DES BREVETS		SMITH C.