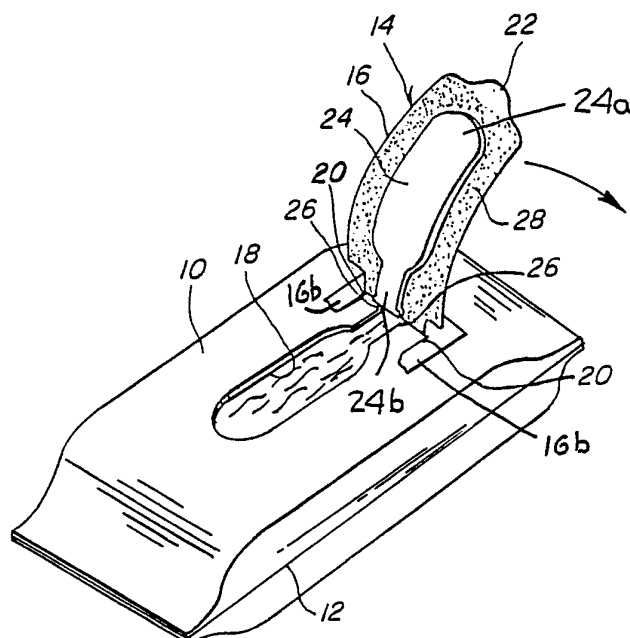




## INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |    |                                                                                                                   |
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| (51) International Patent Classification <sup>4</sup> :<br><br>B65D 33/16, 33/20                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | A1 | (11) International Publication Number: WO 87/ 02645<br>(43) International Publication Date: 7 May 1987 (07.05.87) |
| <p>(21) International Application Number: PCT/US85/02089</p> <p>(22) International Filing Date: 22 October 1985 (22.10.85)</p> <p>(71)(72) Applicant and Inventor: CHANG, Sung-Chol [KR/US]; 1133 Broadway, Suite 403, New York, NY 10010 (US).</p> <p>(74) Agents: REISMAN, James et al.; Gottlieb, Rackman &amp; Reisman, 1430 Broadway, New York, NY 10018 (US).</p> <p>(81) Designated States: BE (European patent), DE, DK, FR (European patent), GB, IT (European patent), LU, NL.</p> <p>Published<br/>With international search report.</p> |    |                                                                                                                   |

(54) Title: CONTAINER WITH RESEALABLE SEALING DEVICE



(57) Abstract

A container (10) having an access opening (18) and a resealable sealing device (14), the latter consisting of a closure flap (16) which is secured at one end region (16a) to the front side of the container and is coated with a pressure-sensitive adhesive (28) to permit the container to be opened and resealed. A pair of L-shaped cuts (19a/19b) are formed in the flap to define a pair of tabs or fingers (16b) integral with the one end region of the flap, and a pair of tear prevention holes (20) are formed at the ends of the cuts on the line of attachment of the body of the flap to the one end region thereof, all to prevent the flap from tearing away from the container. In one embodiment of the invention, a non-adhesive member (24) is cut peninsularly out of the front side of the container to define the access opening and is adhesively secured to the coated face of the flap, and an additional pair of tear prevention holes (26) are provided in the non-adhesive member at the ends of its side edges on a second line of attachment coinciding with the first line of attachment.

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CONTAINER WITH RESEALABLE SEALING DEVICETechnical Field

The invention relates generally to small, flexible containers having sealing devices which may be resealed after having been opened, such as are frequently used for containing plural articles intended to be sequentially extracted from the container and requiring continuous protection prior to their use, e.g. paper tissues, moist towelettes, and the like.

10

Background Art

It is often necessary to provide an inexpensive container in which the contents of the container are protected by a trouble-free reusable seal, so that such contents, for example, paper tissues, moist towelettes, and the like, can be extracted one at a time from the container upon opening of the seal and so that after the seal has been reclosed the remaining contents of the container will be protected as before. One basic form of container of this type, which is well known, is made of a rectangular sheet of thin foil or plastics material having two side regions folded over toward one another so as to overlap slightly. The overlapped margins of the folded-over side regions of the sheet are heat-sealed to each other to provide a longitudinal seam at the middle of one side (the rear side) of the container, and at each end of the sheet the margins of the folded-over side regions are heat-sealed to the adjacent end margin of the unfolded portion of the sheet that defines the other side (the front side) of the container. In its front side the container has an opening through which the contents of the container can be extracted. The opening is normally covered and closed by a flap, preferably made of the same or a similar material as the container body, which is

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permanently secured at one end to the outer surface of the portion of the sheet defining the front side of the container and has its sheet-engaging face coated with a suitable non-hardening pressure-sensitive adhesive. In order to prevent the adhesive from coming into contact with the contents of the container, a separate non-adhesive member, which is smaller than the flap but either of the same shape and size as the opening or of generally the same shape as but somewhat larger than the opening, is adhered to the coated face of the flap in a position such that when the flap is closed the said non-adhesive member overlies the entire expanse of the opening. Representative constructions of such a container are shown in U.S. Patent No. 4,420,080.

Disclosure of the Invention

A primary problem which has arisen with the aforesaid known containers is that the end region of the closure flap which is secured to the front side of the container may be torn from the latter when the flap is pulled up to open the container. A secondary problem which has arisen is that, by virtue of the frequent flexing of the flap during opening and closing of the container, the non-adhesive member may shift its position on the flap or even become separated therefrom and thus fail to properly and fully overlie the opening in the front side of the container when the flap is closed.

The aforesaid primary problem is overcome by a container which has a front side including an opening to provide access to the contents of the container and a resealable sealing device for the opening, wherein the sealing device includes a closure flap which is larger than the opening and is secured to the front side of the container at one end region of the flap adjacent one portion of the periphery of the opening for hinging movement about a line of attachment so as to be able to

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overlie the opening, with the face of the flap which is engageable with the front side of the container being coated with a pressure-sensitive adhesive, and wherein the sealing device further includes a non-adhesive

5 member which is smaller than the flap but at least of the same shape and size as the opening, with the non-adhesive member being adhesively secured to the coated face of the flap in a position thereon where the member will completely overlie the opening when the flap is adhered

10 to the front side of the container; which container is characterized in that the flap has a pair of opposing, generally L-shaped cuts formed therein each of which starts at a respective one of the side edges of the flap and has a first portion extending transversely inwardly of

15 the flap intermediate the ends of the latter and continues with a second portion extending generally longitudinally of the flap toward and terminating at the line of attachment, with the two second portions of the L-shaped cuts being spaced from each other by a distance greater

20 than the width of any portion of the non-adhesive member located between the second portions of the cuts, in that the two L-shaped cuts define at the remote sides of the second portions thereof a pair of generally longitudinally extending tabs or fingers constituting respective integral

25 enlargements of the one end region of the flap so as to enhance the anchoring of the flap to the front side of the container, and in that the flap further has a pair of tear prevention holes formed therein which are located on the line of attachment and each at the termination of a re-

30 spective one of the second portions of the L-shaped cuts, whereby a tearing of the flap beyond the line of attachment and off the container is effectively inhibited.

The aforesaid secondary problem is overcome by a container of the mentioned class which is further

35 characterized in that the non-adhesive member is die-cut in a peninsular form directly out of the front side of the

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container so as to have a main body portion defining the opening and a tongue portion extending generally longitudinally from the main body portion and having opposite side edges generally parallel to the second portions of the L-shaped cuts and terminating at the uncut end of the tongue portion remote from the main body portion of the non-adhesive member, with the said uncut end of the tongue portion lying on a second line of attachment substantially coinciding with the first-mentioned line of attachment of the flap, and in that the non-adhesive member has a second pair of tear prevention holes formed in the front side of the container and located on the second line of attachment each at the termination of a respective one of the side edges of the tongue portion of the non-adhesive member, whereby tearing of the latter and the front side of the container beyond the second line of attachment is effectively inhibited.

#### Brief Description of Drawings

Fig. 1 is a perspective view of a container according to the invention, with the container being shown in a closed position.

Fig. 2 is a similar view but with the container being shown in an open position.

Fig. 3 is a top view of the container blank or starting sheet, shown after the die-cutting of the sheet but before the folding thereof and with the sealing flap shown superimposed in dotted lines.

Fig. 4 is an enlarged top view of the sealing flap per se.

#### Best Mode for Carrying Out the Invention

Referring now to the drawings, Figs. 1 and 2 show a container (similar to that illustrated in the aforesaid U.S. Patent No. 4,420,080) in the form of a flexible pouch having on each side an accordion fold (to allow for expansion of the pouch upon insertion of its contents and

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contraction of the pouch upon withdrawal of its contents) and having on its front side a sealing device 14 including a flap 16 which covers and uncovers an opening 18 through which access may be had to the contents of the container.

- 5 The flap has its face which is engageable with the front side of the container coated with a layer 28 of pressure-sensitive adhesive, and a non-adhesive member 24, which is smaller than the flap 16 and either is of the same shape  
10 and size as the opening 18 or is somewhat larger in shape and size than the opening, is adhesively secured to that face of the flap in a position thereon such that when the flap is closed as in Fig. 1 the member 24 also overlies the opening 18 and prevents the adhesive on the flap from coming into contact with the container contents, e.g.  
15 tissues, towelettes, and the like. The flap 16 further has an end region 16a by which it is permanently secured to the front side of the container and at its opposite end has a finger grip 22 which allows the user to lift the flap in order to open the container, with the main body of  
20 the flap hinging relative to the end region 16a about a line of attachment (not shown).

In accordance with the basic concept of the present invention, tearing of the flap 16 beyond the line of attachment upon opening of the sealing device 14 is  
25 prevented by the provision of a pair of generally L-shaped cuts 19a/19b and an associated pair of tear prevention holes 20 in the flap 16. Each cut (see also Fig. 4) has a first portion 19a starting at a respective side edge of the main body of the flap and extending transversely inwardly  
30 of the flap intermediate the ends of the latter, and a second portion 19b continuing from the innermost end of the respective first portion 19a and extending generally longitudinally of the flap toward and terminating at the line of attachment. The tear prevention holes 20 are  
35 formed on the line of attachment and at the terminations of their associated portions 19b of the L-shaped cuts.

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The transverse spacing between the longitudinal cut portions 19b is somewhat greater than the width of any portion of the non-adhesive member 24 that is located between those portions of the cuts.

- 5           As clearly shown, by virtue of the L-shaped cuts the flap 16 has a pair of generally longitudinally extending tabs or fingers 16b defined at the remote sides of the second portions 19b of the cuts, which tabs or fingers are integral enlargements of the end region 16a of the flap.
- 10   The tabs or fingers 16b serve to enhance the ability of the end region 16a to anchor the flap 16 to the front side of the container 10. It will be understood that in this basic embodiment of the invention, the non-adhesive member 24 of the sealing device 14 may be, although it is not so
- 15   illustrated in the drawing, a separate member of insular form and having a shape and size which correspond to and are at least the same as the shape and size of the access opening 18, generally as shown in the aforementioned U.S. Patent No. 4,420,080. Such an insular member may, of
- 20   course, be die-cut directly out of the part of the sheet of which the front side of the container is constituted.

- Alternatively, in accordance with a further aspect of the present invention, the non-adhesive member 24 is formed by being die-cut in a peninsular form
- 25   directly out of the part of the sheet of which the front side of the container 10 is constituted, such that the member 24 has a main body portion 24a and a somewhat narrower tongue portion 24b, the latter extending generally longitudinally from the former and having
- 30   opposite side edges generally parallel to the second portions 19b of the L-shaped cuts and terminating at the uncut end of the tongue portion 24b remote from the main body portion 24a. The said uncut end of the tongue portion is located at a second line of attachment on the
- 35   front side of the container which directly underlies and essentially coincides with the previously mentioned line

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of attachment of the flap 16, and tearing of the member 24 beyond the second line of attachment is prevented by the provision of a second pair of tear prevention holes 26 in the front side of the container on the second line of  
5 attachment and at the terminations of the opposite side edges of the tongue portion 24b of the member 24. The member 24 is adhesively secured to the coated face of the flap 16 for joint movement therewith when the flap is moved from its closed position (Fig. 1) to its open position  
10 (Fig. 2).

It will be understood that the two sets of tear prevention holes 20 and 26 at the coinciding lines of attachment between, on the one hand, the two portions of the flap 16 and between, on the other hand, the tongue  
15 portion 24b of the member 24 and the front side of the container 10 serve to relieve stresses at those lines, thereby inhibiting tearing of either the flap or the non-adhesive member beyond the respective line of attachment.

For the purpose of making a container 10 of the  
20 type shown in Figs. 1 and 2, use is made, as shown in Fig. 3, of a blank 30 of thin flexible sheet material, e.g. paper, plastic, foil or the like, which is cut into a rectangular shape. Accordion folds 12 are formed in the blank, and a peninsular die-cut is made to form simulta-  
25 neously both the outline of an access opening having a wider main portion and a narrower end portion in the portion of the blank between the accordion folds and a non-adhesive member 24 of corresponding shape which is attached to the blank at the uncut end of the tongue  
30 portion 24b of the member remote from the main body portion 24a thereof. At the same time, two inner flap tear prevention holes 26 are die cut into blank 30.

In order to form the container, the sections 30a and 30b of the blank are laid over the back face of the  
35 section 30c of the blank with the accordion folds 12 at the sides, the edges 32 and 32a are secured to the edge 40

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by a permanent seal, the edges 34 and 34a are secured to the edge 42 by a permanent seal, and the overlapping edges 36 and 38 are secured to each other by a permanent seal. After the container has been so formed, a resealable  
5 sealing device 14 is formed by attaching a closure flap 16, the structure of which is as shown in Fig. 4, to the front side of the container in overlying relation to the member 24 with the aid of a layer of pressure-sensitive adhesive, as shown in broken lines in Fig. 3, care being  
10 taken to dispose the holes 20 in the flap in line with the holes 26 in the blank 30.

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CLAIMS

1. A container which has a front side including an opening to provide access to the contents of the container and a resealable sealing device for the opening, 5 wherein the sealing device includes a closure flap which is larger than the opening and is secured to the front side of the container at one end region of the flap adjacent one portion of the periphery of the opening for hinging movement about a line of attachment between the 10 body of the flap and the said one end region thereof so as to be able to overlie the opening, with the face of the flap which is engageable with the front side of the container being coated with a pressure-sensitive adhesive, and wherein the sealing device further includes a non- 15 adhesive member which is smaller than the flap but at least of the same shape and size as the opening, with the non-adhesive member being adhesively secured to the coated face of the flap in a position thereon where the member will completely overlie the opening when the flap is 20 adhered to the front side of the container;

characterized in that the flap has a pair of opposing, generally L-shaped cuts formed therein each of which starts at a respective one of the side edges of the flap and has a first portion extending transversely 25 inwardly of the flap intermediate the ends of the latter and continues with a second portion extending generally longitudinally of the flap toward and terminating at the line of attachment, with the two second portions of the L-shaped cuts being spaced from each other by a distance 30 greater than the width of any portion of the non-adhesive member located between the second portions of the cuts, in that the two L-shaped cuts define at the remote sides of the second portions thereof a pair of generally longitudinally extending tabs or fingers constituting respective 35 integral enlargements of the one end region of the flap so

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as to enhance the anchoring of the flap to the front side of the container, and in that the flap further has a pair of tear prevention holes formed therein which are located on the line of attachment and each at the termination of a  
5 respective one of the second portions of the L-shaped cuts, whereby a tearing of the flap beyond the line of attachment and off the container is effectively inhibited.

2. A container as claimed in claim 1; further characterized in that the non-adhesive member is die-cut  
10 in a peninsular form directly out of the front side of the container so as to have a main body portion defining a major part of the opening and a tongue portion defining a minor part of the opening, the tongue portion extending generally longitudinally from the main body portion and  
15 having opposite side edges generally codirectional with the second portions of the L-shaped cuts and terminating at the uncut end of the tongue portion remote from the main body portion of the non-adhesive member, with the said uncut end of the tongue portion lying on a second  
20 line of attachment substantially coinciding with the first-mentioned line of attachment of the flap, and in that the non-adhesive member has a second pair of tear prevention holes formed in the front side of the container and located on the second line of attachment each at the  
25 termination of a respective one of the side edges of the tongue portion of the non-adhesive member, whereby tearing of the latter and the front side of the container beyond the second line of attachment is effectively inhibited.

3. A container as claimed in claim 2; further  
30 characterized in that the tongue portion of the non-adhesive member is narrower than the main body portion of the member.

4. A container as claimed in claim 2; further characterized in that the side edges of the tongue portion  
35 of the non-adhesive member are generally parallel to the second portions of the L-shaped cuts.

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5. A container as claimed in claim 4; further characterized in that the tongue portion of the non-adhesive member is narrower than the main body portion of the member.

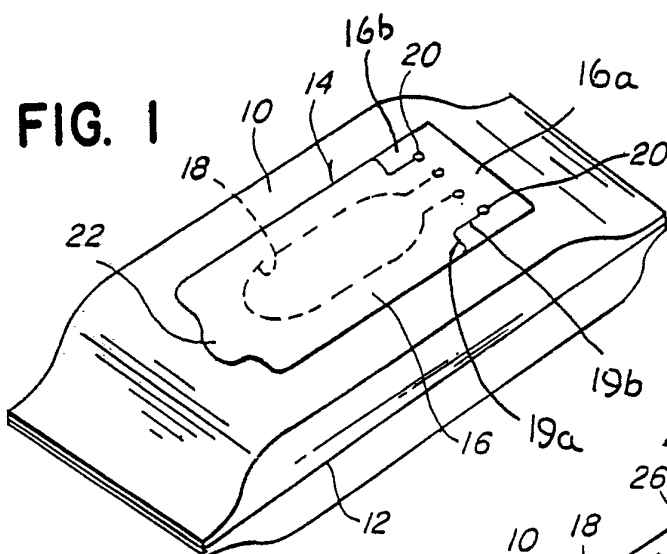
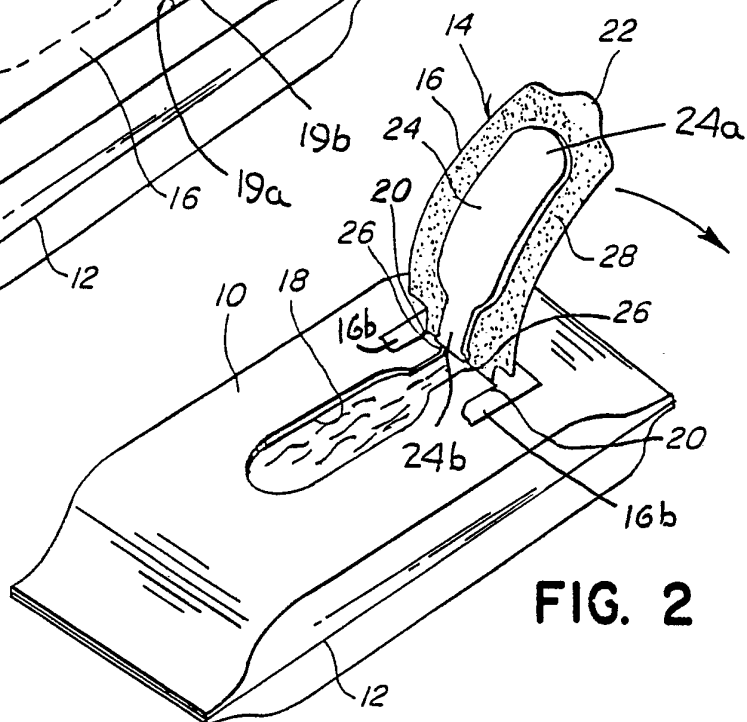
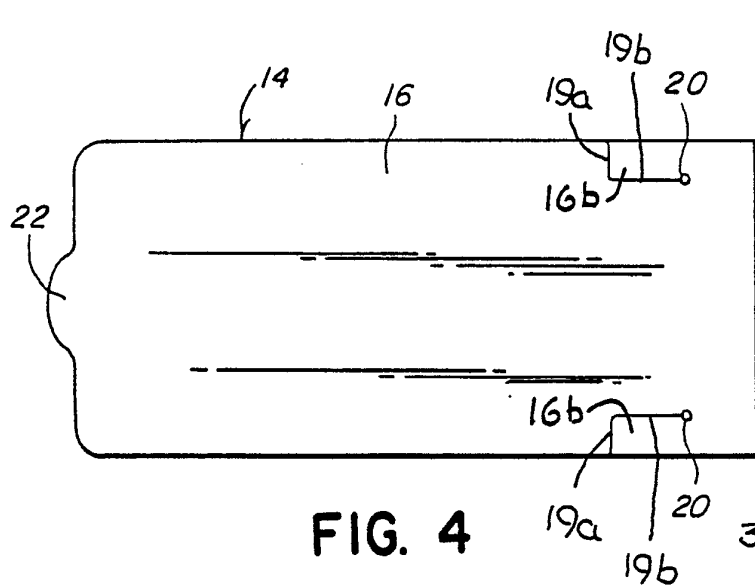


FIG. 1



**FIG. 2**



**FIG. 4**

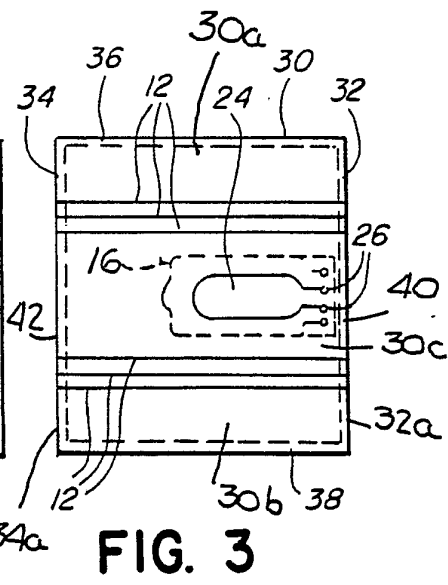


FIG. 3

# INTERNATIONAL SEARCH REPORT

International Application No

PCT/US 85/02089

**I. CLASSIFICATION OF SUBJECT MATTER** (if several classification symbols apply, indicate all) <sup>3</sup>

**According to International Patent Classification (IPC) or to both National Classification and IPC**

Int. CL. 4 B65D 33/16, 33/20 U.S. CL. 206/632

## II. FIELDS SEARCHED

Minimum Documentation Searched 4

| Classification System | Classification Symbols                           |
|-----------------------|--------------------------------------------------|
| U.S.                  | 206/626,632; 220/258,359; 229/7S,<br>383/120,903 |

Documentation Searched other than Minimum Documentation  
to the Extent that such Documents are Included in the Fields Searched <sup>5</sup>

### III. DOCUMENTS CONSIDERED TO BE RELEVANT <sup>14</sup>

| Category * | Citation of Document, <sup>16</sup> with Indication, where appropriate, of the relevant passages <sup>17</sup> | Relevant to Claim No. <sup>18</sup> |
|------------|----------------------------------------------------------------------------------------------------------------|-------------------------------------|
| A          | US, A, 1,944,621 Published 23 January 1934,<br>(Von Atta)                                                      |                                     |
| A          | US, A, 1,997,378 Published 09 April 1935,<br>(Driver)                                                          |                                     |
| A          | US, A, 2,719,663 Published 04 October 1955,<br>(Meyer-Jagenberg)                                               |                                     |
| A          | US, A, 2,896,839 Published 28 July 1959,<br>(Barnes et al)                                                     |                                     |
| A          | US, A, 3,687,352 Published 29 August 1972,<br>(Kalajian)                                                       |                                     |
| A          | US, A, 3,711,011 Published 16 January 1973,<br>(Kugler)                                                        |                                     |
| A          | US, A, 4,192,420 Published 11 March 1980,<br>(Worrell et al)                                                   |                                     |
| A          | US, A, 4,260,061 Published 07 April 1981,<br>(Jacobs)                                                          |                                     |

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"&" document member of the same patent family

#### IV. CERTIFICATION

Date of the Actual Completion of the International Search <sup>2</sup>

25 November 1985

International Searching Authority <sup>1</sup>

ISA/US

Date of Mailing of this International Search Report :

30 DEC 1985

Signature of Authorized Officer 20

Signature of Authorized Officer: Stephen Gark