



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

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<p>(21) International Application Number: PCT/HU90/00066 (22) International Filing Date: 19 September 1990 (19.09.90) (30) Priority data: 4898/89 20 September 1989 (20.09.89) HU (71)(72) Applicants and Inventors: KALAPÁCS, János [HU/HU]; Csokonai u. 10. fsz.2, H-1081 Budapest VIII (HU). LOBAK, Mihail Iszákovics [SU/SU]; Kornyejsuka sgt. 39, flat 25, Kiev, 252000 (SU). (74) Agent: S.B.G. &amp; K. PATENT AND LAW OFFICE; Dalszínház u. 10, H-1061 Budapest (HU).</p>		<p>(81) Designated States: AT (European patent), AU, BE (European patent), BG, BR, CA, CH (European patent), DE (European patent)*, DK (European patent), ES (European patent), FI, FR (European patent), GB (European patent), IT (European patent), JP, KP, KR, LU (European patent), MC, NL (European patent), NO, RO, SE (European patent), SU, US.  <b>Published</b> <i>With international search report.</i></p>
<p>(54) Title: LOGICAL MOSAIC-PUZZLE</p>		
<p>(57) Abstract</p> <p>The invention relates to a logical mosaic-puzzle containing fifteen elements, out of which thirteen mosaic-puzzle elements (3, 4, 5) are arranged in three circles (I, II, III) extending partly into each other in a frame consisting of two parts (1, 2) in the assembled state of the toy. The puzzle-elements (3, 4, 5) belonging to the circles (I, II, III) fitted to each other accurately, however loosely, can be turned simultaneously along the axis of a circle each in respect to the other circles, further, one circle each consists of six-puzzle-elements (3, 4, 5), out of which -in the starting position- one element (3) forms the part of all the three circles (I, II, III), said puzzle-elements (3, 4, 5) are provided with projections (3', 4', 5'), three different shaped puzzle-elements have different projections which are connected to the groove between the casing (1) and the claming frame (2), resp. to the grooves (4'', 5'') on the puzzle-elements (4, 5) having been formed on the arches without projection.</p> <div data-bbox="726 1209 1460 2004" style="text-align: right;"> </div>		

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- 1 -

LOGICAL MOSAIC-PUZZLETechnical Field

The invention relates to a logical mosaic-puzzle containing fifteen parts, out of which thirteen mosaic-puzzle elements are arranged in three circles extending partly into each other in a frame consisting of two parts, in the assembled state of the toy.

Background Art

The most general well-known types of the mosaic-puzzles are based on an arrangement, with which different elements, plates are to be fitted to each other with the aim to produce some pre-determined shape and configuration respectively.

Mosaic-puzzles, with which the elements are starting from a given place have been considered as novelties, as the place of one element was left empty, whereby the desired formation, configuration can be obtained by shifting, displacing the puzzle-elements having been provided with numbers or other markings or being only simply coloured. Even at present a small number of planar toys or toys with a planar effect are known, with which motion of the elements is solved in a different way, e.g. by the transformation of spatial possibilities into the plane, so e.g. by means of balls, gears and pins, by sliding elements into one another. Far lower is the number of toys, with which simultaneously several elements can be put into motion.

The invention relates to a logical mosaic-puzzle with a planar effect, with which the elements of the toy - simultaneously a plurality of elements - can be turned to form the desired configurations. By mixing up of the elements several variations may be obtained.

By virtue of shape and easy manipulation, the toy

- 2 -

according to the invention is well suitable for the development of logical and combinative abilities. For turning the toy-elements several logical mosaic-puzzles are known. Similar solutions are specified in the PS-SU-1238773, 5 GB-PS 2199 755 and GB-PS 2 117 256. Shape of the elements, mode of fitting the configurations to be obtained, accordingly the general impression are differing from one another and from the solution according to the invention. The disadvantage of all said solutions lies in that construction 10 and facilitating of manipulation have been solved to the detriment of playing.

#### Disclosure of the Invention

The invention is based on the recognition that three circular plates of proper thickness, extending into one another, 15 sliced into curved puzzle-plates can be rotated in respect to each other, thereby mosaic-puzzle plates get mixed up. The embodiment according to the invention can be built-up of fifteen elements. According to the present invention, the logical mosaic-puzzle contains fifteen parts, elements, out 20 of which thirteen mosaic-puzzle elements are arranged in three circles extending partly into each other in a frame consisting of two parts, in the assembled state of the toy, wherein the mosaic-puzzle elements belonging to the circles fitted to each other accurately, however loosely, can be 25 turned simultaneously along the axis of a circle each in respect to the other circles, further, one circle each consists of six mosaic-puzzle elements, out of which - in the starting position - one element forms part of all the three circles, said mosaic-elements are provided with projections, 30 three different shaped puzzle-elements have different projections which are connected to the groove between the casing and the clamping frame resp. to the grooves on the puzzle-

- 3 -

-elements having been formed on the arches without projection.

#### Brief Description of Drawings

A preferred embodiment of the invention will be described by way of example and with reference to the accompanying drawings, in which:

- Fig. 1 is a plane view of a mosaic-puzzle in accordance with the invention, in assembled state;
- Fig. 2 is a plan view of the casing;
- 10 - Fig. 3 is a vertical section of the casing;
- Fig. 4 is a plan view of the clamping frame;
- Fig. 5 is a vertical section of the clamping frame;
- Fig. 6 is a top view of a puzzle-element with three projections;
- 15 - Fig. 7 is a side view of the puzzle-element shown in Fig. 6;
- Fig. 8 is a top view of a puzzle-element with two projections;
- Fig. 9 is a side view of the puzzle-element shown in
- 20 Fig. 8;
- Fig. 10 is a side view of a puzzle-element with one projection;
- Fig. 11 is a side view of the puzzle-element shown in Fig. 10.

#### 25 Best Mode of Caarrying out the Invention

Referring to Figs. 1 to 3, there is shown a preferred embodiment of the present invention (Fig. 1).

As main elements let us mention the casing (1) and the clamping frame (2). The clamping frame (2) holds together

30 the thirteen pieces of curved mosaic-puzzle elements (3,4,5). Toy-elements (3, 4, 5) represent three kinds of type. In

- 4 -

accordance with break down, in compliance with formation there are nine elements (4) having projections (4') on both lateral arches and a groove (4'') on the third arch (Figs. 8 and 9); there are three elements (5) with a projection (5') on one arch and a groove (5'') on the two lateral arches (Figs. 10 and 11) furtheron, there is one element (3) provided with projections (3') on all the three arches (Figs. 6 and 7). In course of assembling the puzzle-elements, projections and grooves and elements (3, 4, 5) are fitted into each other and placed into the casing (1) so, as to form three circles (I, II, III), extending parts symmetrically into each other, when fitted together and placed into the clamping frame (2), between the casing (1) and the clamping frame (2) a groove will be formed. All grooves and projections of the puzzle-elements are fitting accurately but loosely. In such a manner it becomes possible that in any position six elements each of one, two or all the three circles could be turned in respect to the other elements independently, by means of two fingers. In accordance with the aim set, from turn to turn we can change the position of the puzzle-elements, one element each may be transferred from one circle to the other and if desired, into the third one. The sense of the game becomes obvious, if visible surfaces of the elements are provided with distinguishing colours or markings.

In the general form of realization, in the starting position of the toy according to the invention (see Fig. 1), the puzzle-element (3) is arranged in the centre, colouring corresponds to the colours of the clamping frame (2) and casing (1). A circle each contains independently three puzzle-elements (4) of one type and one puzzle-element (5) of another type. As a matter of fact, due to overlapping, in

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- 5 -

respect to colours four elements each can be distinguished, three pieces of the type (4) and one piece of the type (5).

In the starting position: red: 4a, 5a; green: 4b, 5b; blue: 4c, 5c; yellow: elements 3, 2, 1. As a general approximation the aim of the game lies in to turn back the elements from any position into the original starting configuration, while obtaining any other configuration can be aimed at, too. Several possibilities of variation render the game increasingly exciting. An additional advantage of the invention lies in, if the casing (1) is formed as a key-holder (see Fig.1).

- 6 -

Claims

1. Logical mosaic-puzzle containing fifteen elements, out of which thirtreen mosaic-puzzle elements are arranged in three circles (I, II, III) extending partly into each other in a frame consisting of two elements (1, 2) in the assembled state of the toy, characterized in that the toy-elements (3, 4, 5) belonging to the circles (I, II, III) fitted to each other accurately, however loosely, can be turned simultaneously along the axis of a circle each in respect to the other circles, furtheron, one circle each consists of six toy-elements (3, 4, 5), out of which - in the starting position - one element (3) forms the part of all the three circles (I, II, III), said toy-elements (3, 4, 5) are provided with projections (3', 4', 5'), three different shaped toy-elements have different projections which are connected to the groove between the casing (1) and the clamping frame (2), resp. to the grooves (4", 5") on the toy-elements (4, 5) having been formed on the arches without projection.

2. Logical mosaic-puzzle as claimed in claim 1, characterized in that three equally dimensioned circles (I, II, III) are extending partly and symmetrically in one another, on the lateral arches of the elements (3, 4, 5) forming the circles (I, II, III) projections are formed, as well as grooves (4", 5") for the receiving thereof.

3. Logical mosaic-puzzle as claimed in claim 1 or 2, characterized in, that a circle each consists of six toy-elements (3, 4, 5) fitted accurately, however loosely to each other, wherein the toy-elements (3, 4, 5) are interconnected by means of projections (3', 4', 5') and grooves (4", 5"), respectively, formed on the lateral arch of said elements.



4. Logical mosaic-puzzle as claimed in claim 1,  
c h a r a c t e r i z e d in that the toy-elements (3,4,5)  
of different types forming the three circles (I, II, III) are  
held together by means of a casing (1) and a clamping frame  
5 (2) so, that the projections (3', 4', 5') on the lateral  
arches of the elements (3, 4, 5) are fitting accurately, but  
loosely into the groove between the casing (1) and the clamp-  
ing frame (2).

5. Logical mosaic-puzzle as claimed in one of the claims  
10 1 to 4, c h a r a c t e r i z e d in that visible surfaces  
of the elements (3, 4, 5) are distinguished by colour or any  
other markings.

6. Logical mosaic-puzzle as claimed in one of the claims  
1 to 4, c h a r a c t e r i z e d in that turning of the  
15 different toy-elements (3, 4, 5) resp. of the circles (I, II,  
III) enclosed in the house (1) and the clamping frame (2)  
can take place simultaneously from two side of the space  
only, as a consequence, planar characteristics of the toy  
change it into a solid.

1/3

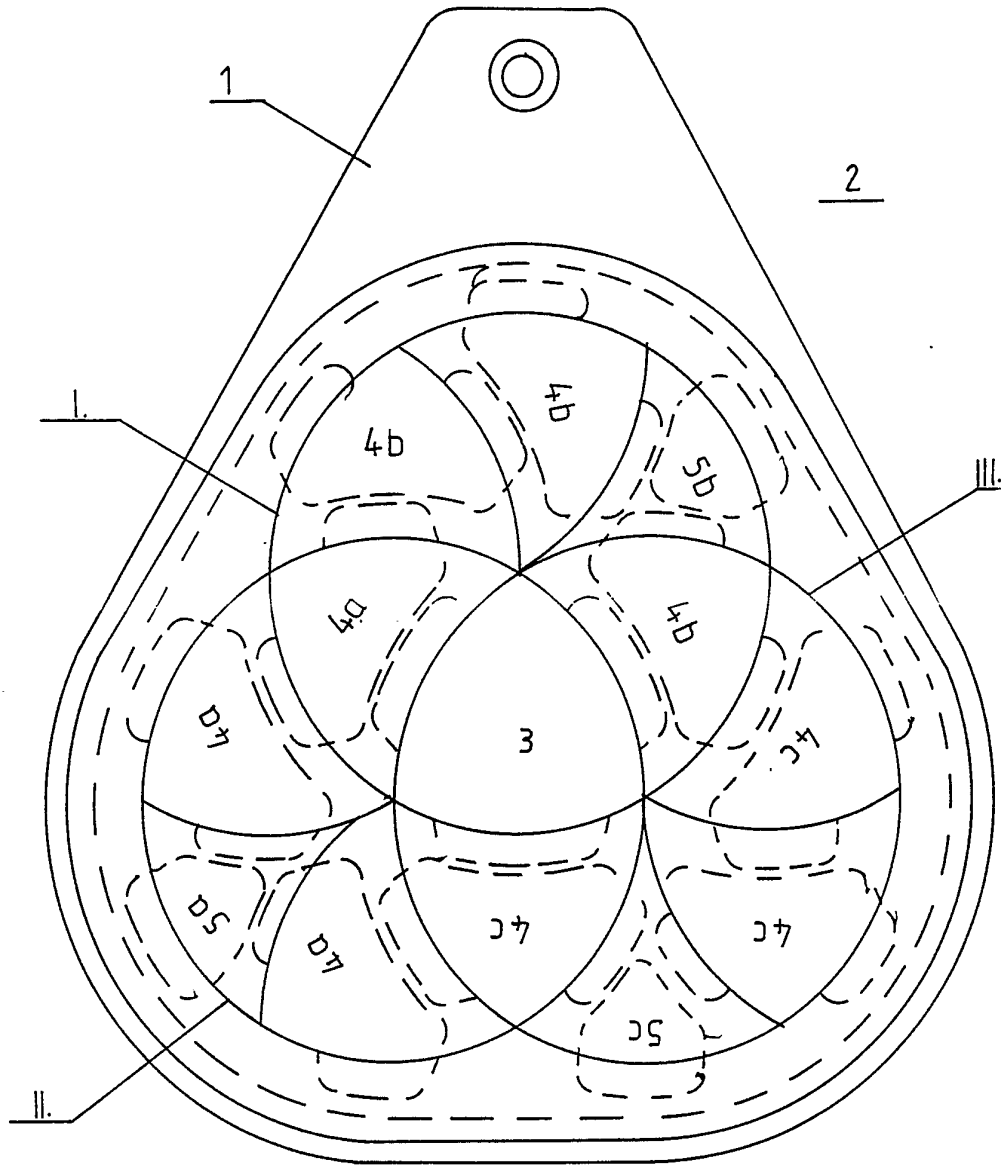


Fig. 1.

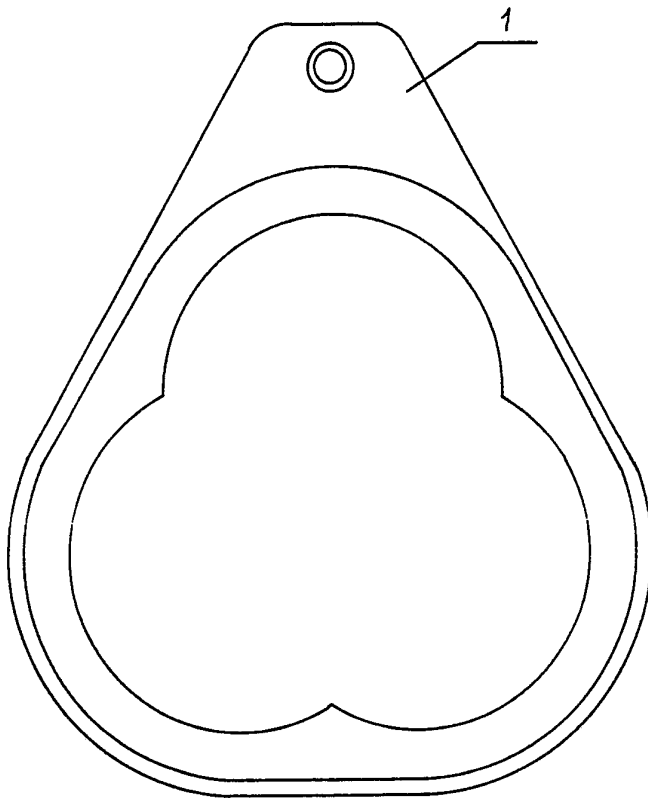


Fig. 2.

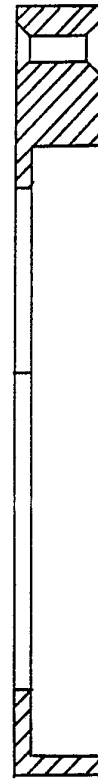


Fig. 3.

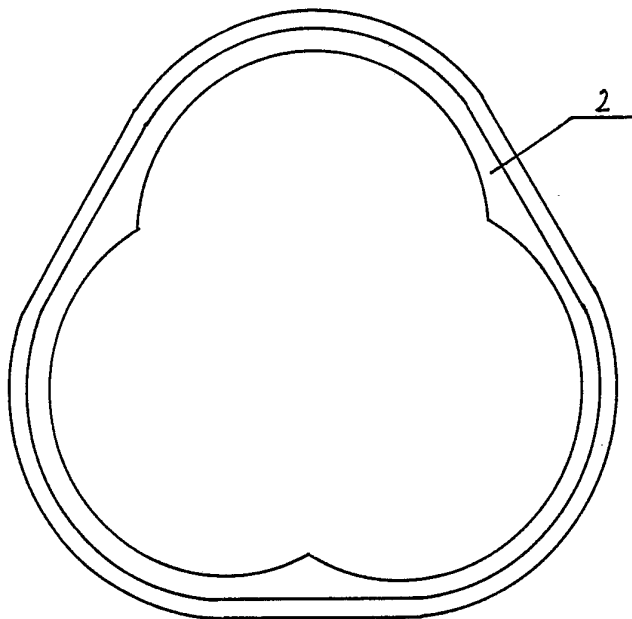


Fig. 4.



Fig. 5.

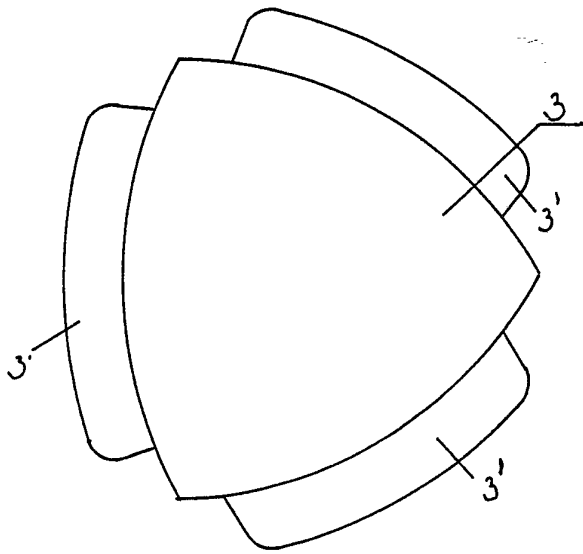


Fig. 6.

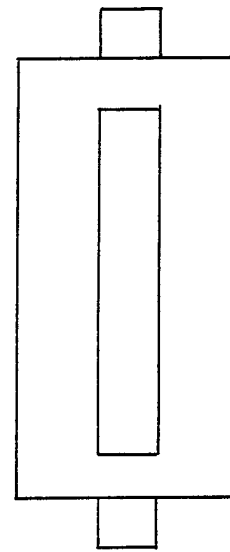


Fig. 7.

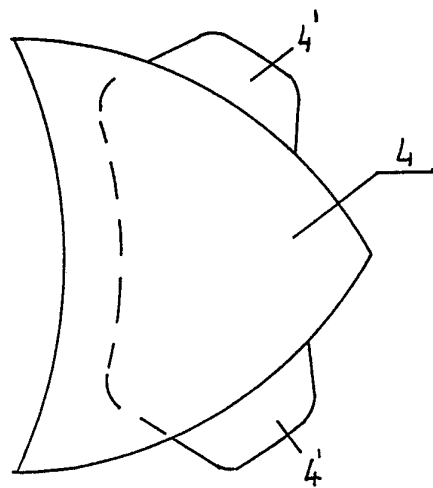


Fig. 8.

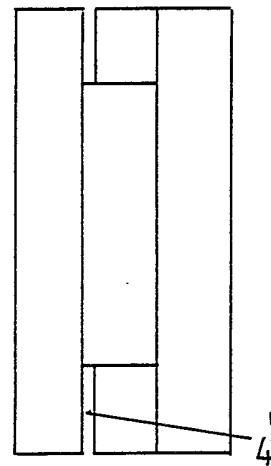


Fig. 9.

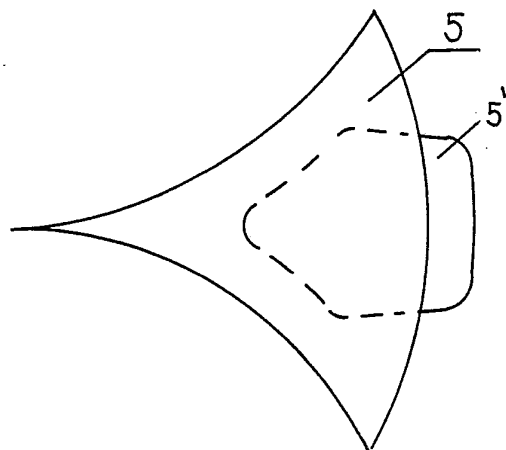


Fig. 10.

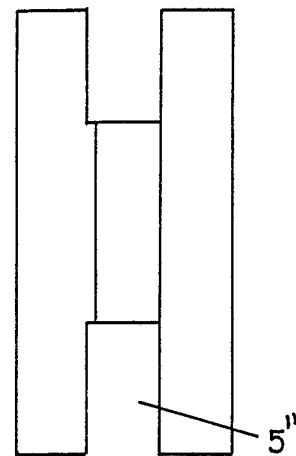
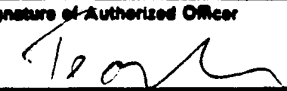


Fig. 11.

# INTERNATIONAL SEARCH REPORT

International Application No PCT/HU90/00066

<b>I. CLASSIFICATION OF SUBJECT MATTER</b> (if several classification symbols apply, indicate all) <sup>4</sup>		
According to International Patent Classification (IPC) or to both National Classification and IPC		
IPC <sup>5</sup> : A 63 F 9/08		
<b>II. FIELDS SEARCHED</b>		
Minimum Documentation Searched <sup>7</sup>		
Classification System	Classification Symbols	
Int. Cl. <sup>5</sup> :	A 63 F 9/08, 9/06, 9/00	
Documentation Searched other than Minimum Documentation to the Extent that such Documents are Included in the Fields Searched <sup>8</sup>		
<b>III. DOCUMENTS CONSIDERED TO BE RELEVANT <sup>9</sup></b>		
Category <sup>9</sup>	Citation of Document, <sup>11</sup> with indication, where appropriate, of the relevant passages <sup>12</sup>	Relevant to Claim No. <sup>13</sup>
Y A	FR, A2, 2 489 164 (HENRIQUES RABA), 05 March 1982 (05.03.82), see fig. 1-3.	(1) (2,3,4,5,6)
Y A	FR, A1, 2 490 102 (HENRIQUES RABA), 19 March 1982 (19.03.82), see fig. 10,11; page 5, lines 22-33.	(1) (4,5)
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<b>IV. CERTIFICATION</b>		
Date of the Actual Completion of the International Search		Date of Mailing of this International Search Report
04 December 1990 (04.12.90)		07 December 1990 (07.12.90)
International Searching Authority		Signature of Authorized Officer
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Anhang zum internationalen Recherchenbericht über die internationale Patentanmeldung Nr.

In diesem Anhang sind die Mitglieder der Patentfamilien der im obengenannten internationalen Recherchenbericht angeführten Patentedokumente angegeben. Diese Angaben dienen nur zur Unterrichtung und erfolgen ohne Gewähr.

Annex to the International Search Report on International Patent Application No. PCT/HU 90/00066

This Annex lists the patent family members relating to the patent documents cited in the above-mentioned International search report. The Austrian Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

Annexe au rapport de recherche internationale relatif à la demande de brevet international n°.

La présente annexe indique les membres de la famille de brevets relatifs aux documents de brevets cités dans le rapport de recherche internationale visé ci-dessus. Les renseignements fournis sont donnés à titre indicatif et n'engagent pas la responsabilité de l'Office autrichien des brevets.

Im Recherchenbericht angeführtes Patent- dokument Patent document cited in search report Document de brevet cité dans le rapport de recherche	Datum der Veröffentlichung Publication date Date de publication	Mitglied(er) der Patentfamilie Patent family member(s) Membre(s) de la famille de brevets	Datum der Veröffentlichung Publication date Date de publication
FR-A2- 2489164	05-03-82	None	
FR-A1- 2490102	19-03-82	None	