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<p>(21) International Application Number: PCT/HU89/00037 (22) International Filing Date: 19 July 1989 (19.07.89) (30) Priority data: 6384/88 12 December 1988 (12.12.88) HU (71)(72) Applicants and Inventors: PSZOTKA, Ede [HU/HU]; PSZOTKA, Ede, Jr. [HU/HU]; SÁROSI, Istvánné [HU/HU]; PSZOTKA, Edéné [HU/HU]; Nyúl utca 13/B, H-1024 Budapest II (HU). (74) Agent: PATENT AND LAW OFFICE FOR INTERNATIONAL AFFAIRS; Dalszínház utca 10, H-1061 Budapest VI (HU).</p>		<p>(81) Designated States: AT (European patent), BE (European patent), CH (European patent), DE (European patent), DK, FR (European patent), GB (European patent), IF (European patent), JP, KR, LU (European patent), NL (European patent), SE (European patent), SU, US. Published <i>With international search report.</i></p>
<p>(54) Title: LOGICAL TOY</p> <div data-bbox="590 1232 1228 1836" data-label="Diagram"> </div> <p>(57) Abstract</p> <p>The invention relates to a logical toy. The flat play-field (5) of the logical toy is formed by toy elements (3) movable in a house (1), and associated with information-carrier (9), mainly marked with colour. The essential feature of the invention is that the house (1) has at least four circular nests (2). The toy elements (3) are almond-shaped plates in top view, the envelope curve of which at least on two sides is a circular arc of about the same radius as the radius (R) of the nest (2) and are slidable along the circumference of the nest (2) forming circular toy unit (4) of the same number as the number of nests (2). These toy units (4) are arranged in the play-field (5) so that two adjacent toy units (4) overlap each other by the area of a single toy element (2). Each toy unit (4) is turnably embedded in house (1) and provided with a driving element (6) capable to turn all of its toy elements (3) jointly in the nest (2). This invention may offer exciting entertainment for children and adults alike. The solution of the toy can be made more difficult by increasing the number of the toy units.</p>		

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- 1 -

LOGICAL TOY

Technical field

The invention relates to a portable and/or table-toy for the entertainment of children and adults.

5 Background Art

Several logical toys are known where the flat play-field is formed by toy elements movably arranged in a house. These elements are provided

with information-carrier, e. g. marked by colour, number or part of a picture. Solution of the game is when the usually square toy elements are re-arranged by the player in longitudinal and cross
5 direction resulting in a colour pattern, sequence of numbers or a picture.

According to the practical experiences however, such toys are in vogue, that is after a certain time they no longer stimulate the player.
10 Consequently it is necessary to place newer and newer logical toys on the market.

The present invention is aimed at elimination of the above deficiency and to produce a logical toy that partly expands the choice and partly offers
15 high-level entertainment for children and adults alike.

Disclosure of the Invention

For solving the problem, the traditional logical toy described in the foregoing was used as a starting
20 point. This was further developed according to the invention by at least four circular nests in a house, furthermore the toy elements are almond-shaped plates in top view, the envelope curve of which at least on two sides is formed as a circular arc of the same
25 radius as that of the nest. These toy elements are slidable along the circumference of the nests and constitute a circular toy unit of the same number as the number of the nests. The toy units are arranged in the flat play-field so that two adjacent
30 toy units overlap one another by the area of one toy element. Furthermore, each toy unit is turnably embedded in the house and provided with a driving

element capable to turn all of its toy elements jointly in the nest.

Such construction is practical, where the driving element is a star-shaped plate provided with driving bolt protruding from the house,
5 being in connection with all toy elements of the toy unit in closed configuration. This represents a very simple construction.

Such construction is also feasible, where at least two adjacent but not overlapping toy units are provided with gears engaged with each other and turning together with the driving element. Thus, the two toy units are interlocked, whereby the solution becomes more complicated.

15 Brief Description of Drawings

The invention is described in detail by way of examples with the aid of drawing, in which:

Fig. 1: Schematic top view of the simplest embodiment of the logical toy according to the invention, given by way of example,
20

Fig. 2: Decomposed view of a single toy unit as detail of Fig. 1,

Fig. 3: Further version of the solution shown in Fig. 1,

25 Fig. 4: Section along line IV-IV marked in Fig. 3,

Fig. 5: Top view of the logical toy according to the invention given by way of a further example,

Fig. 6: Top view of the embodiment given by way of a further example,
30

Fig. 7: Top view of an extended version of the solution shown in Fig. 6.

Best Mode of Carryin out the Invention

As shown in Fig 1, subject of the invention is a portable (pocket-type) or table-toy. The logical toy has four circulat nests 2 in house 1.
5 The four toy elements 3 in each nest 2 are slidable along the circumference. The toy elements 3 are made as almond-shaped plates, the enveloping curve on both sides is a circular arc in the present case, the radius of which is identical with the radius R
10 of nest 2. Each nest 2 with the pertaining four toy elements 3 constitutes a toy unit 4. The toy units 4 are arranged in the play-field 5 so that two adjacent circular toy units 4 overlap each other by the area of one toy element.

15 According to the invention each toy unit 4 is provided with a driving element 6 capable to turn its toy elements 3 jointly in the nest 2. As clearly shown in Fig 1 and 2, the driving element 6 is a star-shaped plate in the present case, forming a
20 closed configuration with all toy elements 3 of the toy unit 4.

The detail in Fig 1 illustrates the house 1 provided with a transparent cover 7.

25 Fig. 1 and 2 show top view of the toy, where the driving elements 6 are provided with central driving bolt 8 turnably embedded in house 1, while its upper end extends through opening of the cover 7. The player turns the toy elements 3 in one of the toy units 4 by the protruding part of the driving bolt 8.

30 The upper surface of the toy elements 3 is provided with information-carrier 9, e. g. marked with colour, number or in another manner. In the

present case, the whole surface of the toy elements 3 is provided with colours as information-carrier 9. Because the colours cannot be used in the enclosed drawings, for the sake of simplicity the different colours are marked by letters A, B, C, D etc., representing red, green, blue and black colours respectively.

The logical toy according to the invention in Fig. 1 shows the colour pattern indicating the solution. This is the position to be arrived at by the player. According to the principle to be followed when the lower toy unit 4 is turned at 90° , the relative position of the toy elements 3 will be altered. This is followed by turning the toy unit 4 on the right at 90° with driving element 6, whereby the player can change the relative position of the pertaining toy elements 3. Then, the player turns all the four toy units 4 clockwise (or anticlockwise) until the colour combination representing the solution is set on the play-field. Naturally, the combination and logical ability of the player have a prominent role in the quickness of reaching the solution, since this way the solution can be sooner arrived at.

Fig. 1 clearly shows that the centrelines of the toy units 4 are situated at a distance R from each other.

The toy elements 3 in Fig. 2 is provided with a different type of information-carrier 9'. Here, a strip of colour made up of two different colours was used. Its use will be dealt with in connection with Fig. 5 and 6.

Fig. 3 shows a version of the solution according to Fig. 1, where the non overlapping toy units 4 on the left and right are provided with gears 10 and 11 engaged with each other, and turnable together with the driving element 6. Fig. 4 clearly shows that the gears 10 and 11 in house 1 are fixed on the driving bolts 8 and arranged below the driving elements 6. This interlocking further complicates the solution, since when the toy unit 4 on the right is turned, the toy unit 4 on the left will also turn necessarily in the opposite direction, which has to be reckoned with by the player.

Such embodiment is shown in Fig. 5, where five toy units 4 are situated in the play-field 5. Their centrelines are at a distance from each other corresponding to the radius R of nests 2 with overlapping as described in connection with Fig. 1. Here, partly the information-carriers 9' were used for the toy elements 3 and partly such information-carriers 9" where a single strip of colour appears along the outer edge. Thus, in the arrangement according to Fig. 5, solution of the game means the condition shown here, when the five differently coloured rings intersect each other as illustrated. (The yellow colour was marked by E.)

The embodiment according to Fig. 6 given by way of further example is in essence a version of the solution shown in Fig. 5, where the five-ring "olympic symbol" represents the solution. The identical parts were marked with the same reference numbers.

Finally, Fig. 7 shows a complemented version of the arrangement according to Fig. 6, where seven toy units 4 are used by way of mirror-image in the illustrated arrangement. Here, the whole cover of the toy elements 3 is marked by colours as information-carrier 9, but in given case information-carrier 9' or 9" might also be used. Otherwise, the course of the game is the same as before.

It is noted that complexity of the game and difficulty of its solution increase in proportion to the number of toy units 4. Great many other arrangements and combination are conceivable. The driving element 6 does not have to be star-shaped, which is connected with the toy elements 3 in such closed configuration. Driving of the toy elements 3 by turning can be solved for example with such driving element which when pressed down against a spring, brings the toy elements 3 to driving connection with the aid of appropriate extensions.

Furthermore it is noted, that it is practicable to turn the toy elements 3 at 90° or its multiple. In these positions locking with spring ball or spring pin can also be realized which is engaged with the respective socket of the driving elements 3. In another arrangement such version is also conceivable, where each toy unit 4 is provided with more than four toy elements 3 and the degree of turn may deviate from 90° .

The experiments indicate that the logical toy according to the invention may offer exciting entertainment for children and adults alike. The solution can be made more difficult at will, by increasing the number of toy units. Furthermore, it can be regarded

as an advantage, that the arsenal of the existing toys will become colourful and wider with the logical toy according to the invention.

C L A I M S

- 1) Logical toy, comprising a flat play-field formed by toy elements being movable arranged in a house, wherein said toy elements are associated with information-carrier, mainly marked with colour, characterized in that the house (1) has at least four circular nests (2), furthermore the toy elements (3) in top view are almond-shaped plates, the envelope curve of which at least on two sides is a circular arc of - approximately - the same radius as the radius (R) of the nests (2), said toy elements (3) are slidable along the circumference of the nests (2) forming circular toy units (4) of the same number as the number of the nests (2), said toy units (4) are arranged in the play-field (5) so that two adjacent toy units (4) overlap each other by the area of one toy element (3), furthermore each of the toy units (4) provided with a driving element (6) which is turnably embedded in the house (1) and capable to turn all of its toy elements (3) jointly in the nest (2).
- 2) Logical toy according to claim 1, characterized in that the driving element (6) is a starshaped plate provided with driving bolt (8) protruding from house (1), and said driving element (6) is connected with all toy elements (3) of the toy unit (4) by positive coupling.
- 3) Logical toy according to claim 1 and 2, characterized in that at least two adjacent toy units (4) not overlapping each other are provided with gears (10, 11) engaged with one another and turning together with the driving element (6).

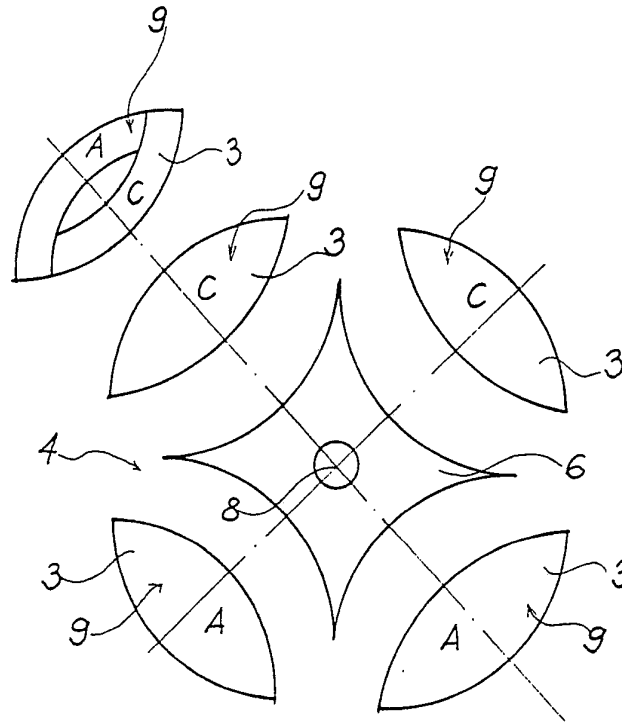


Fig. 2.

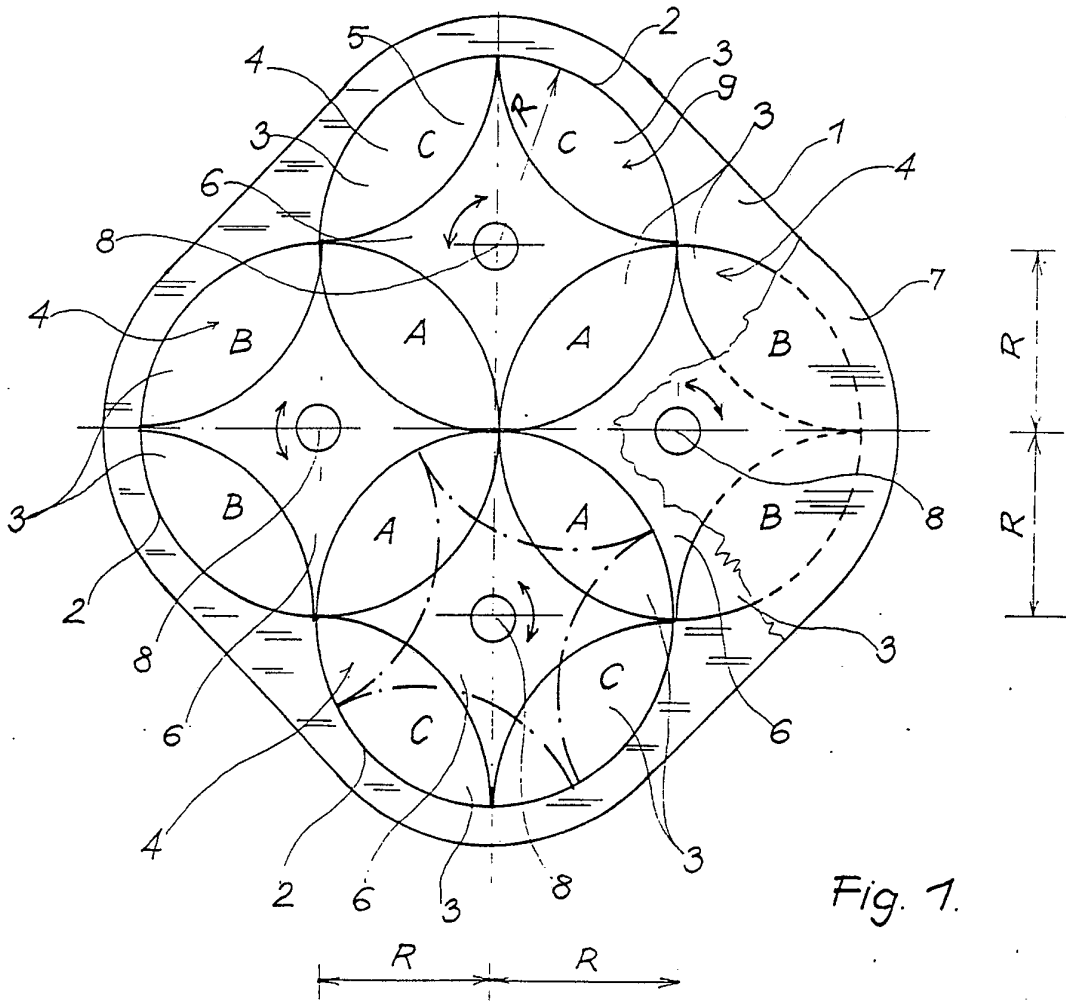


Fig. 1.

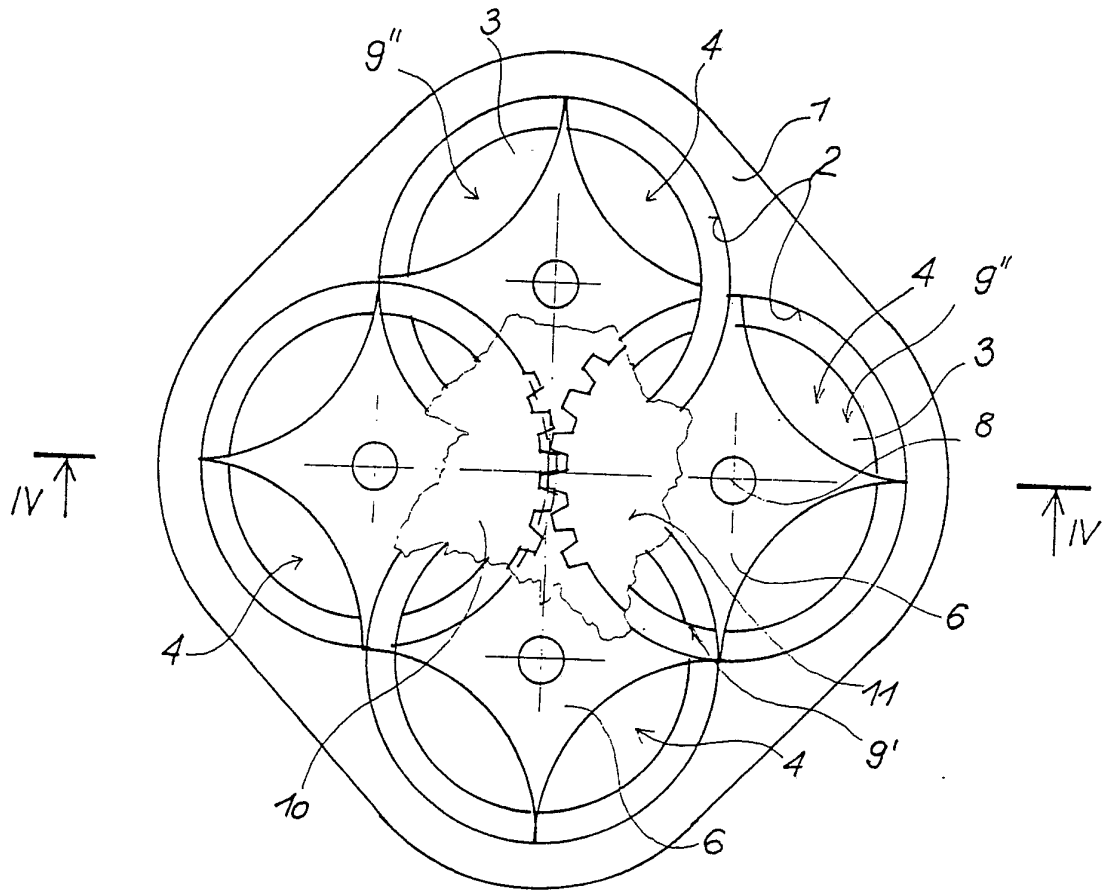


Fig. 3.

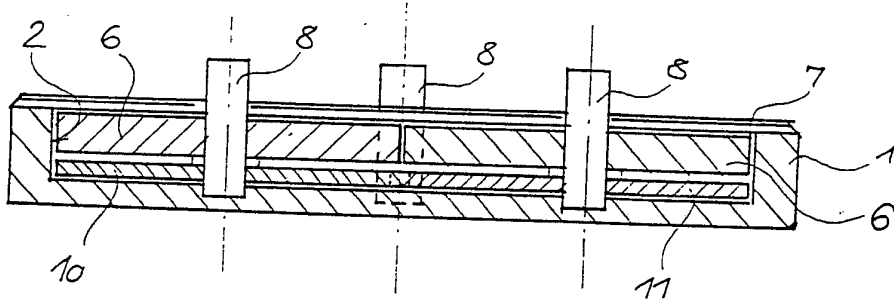


Fig. 4.

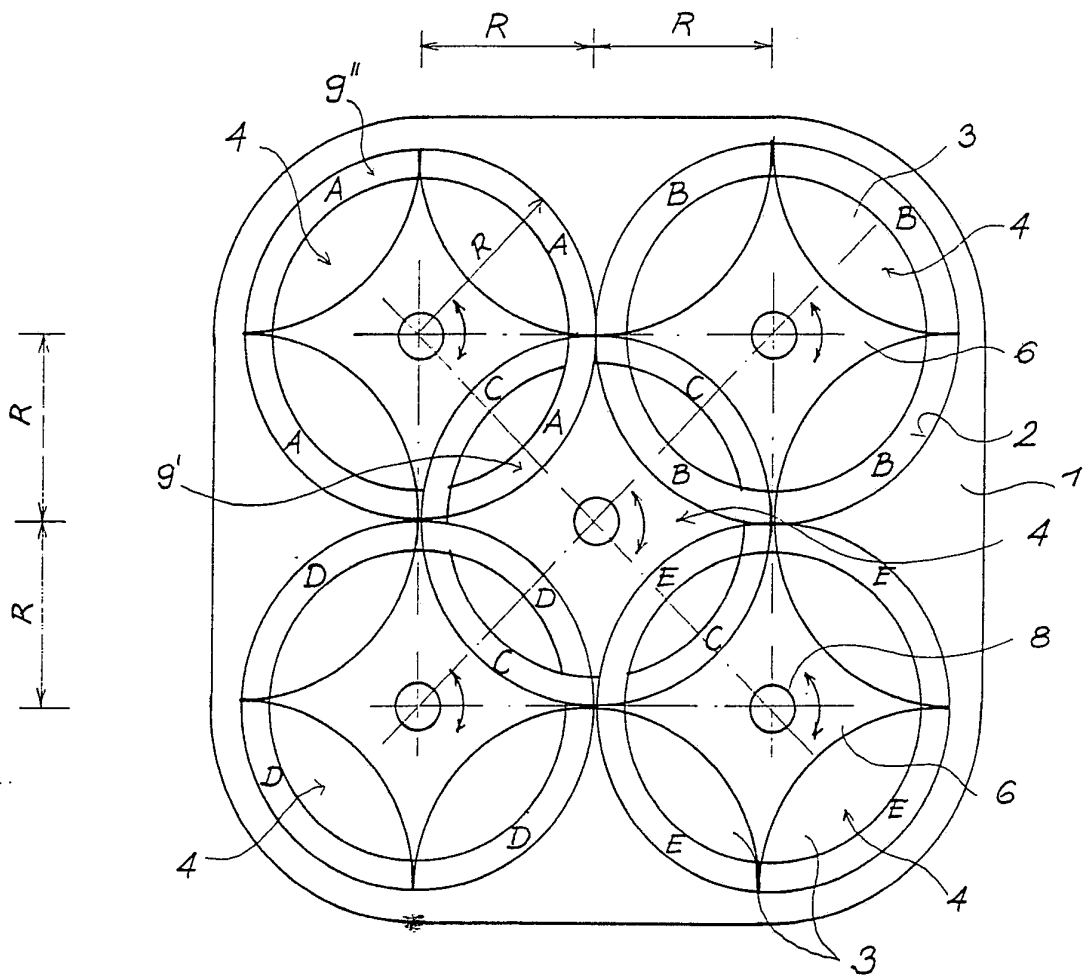


Fig. 5.

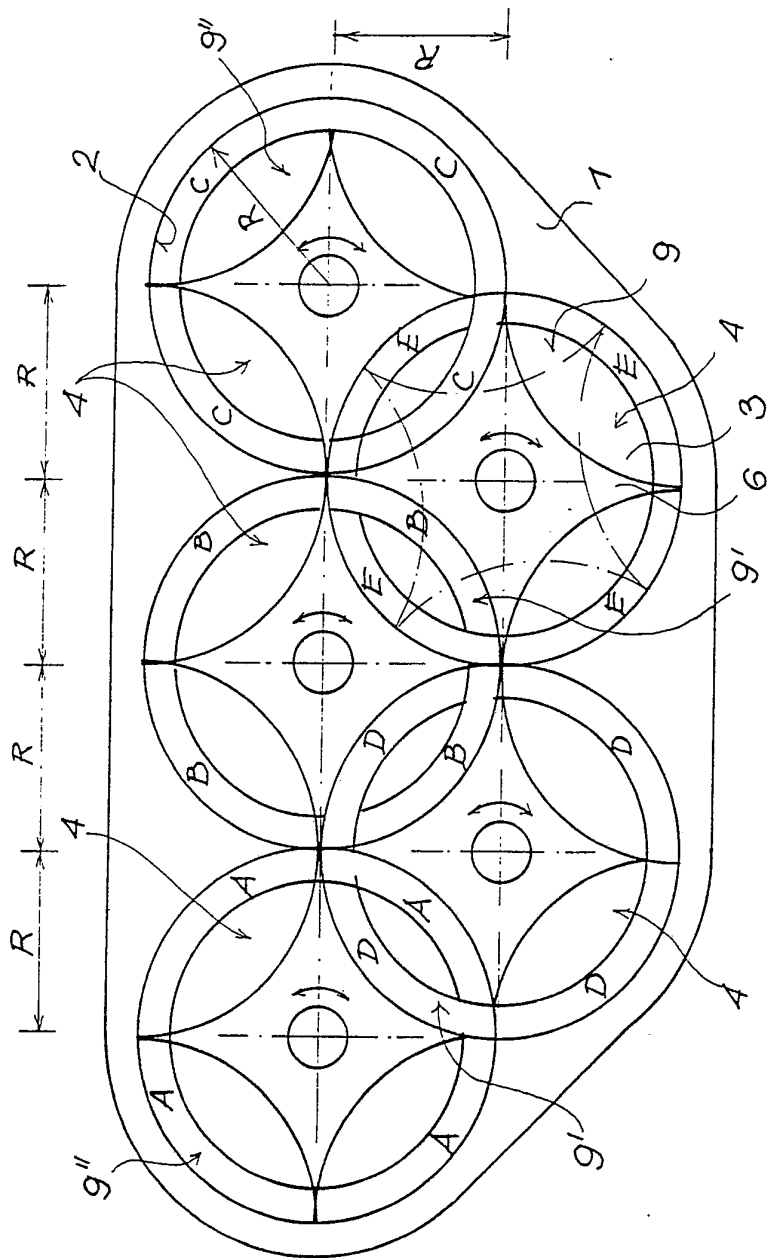


Fig. 6.

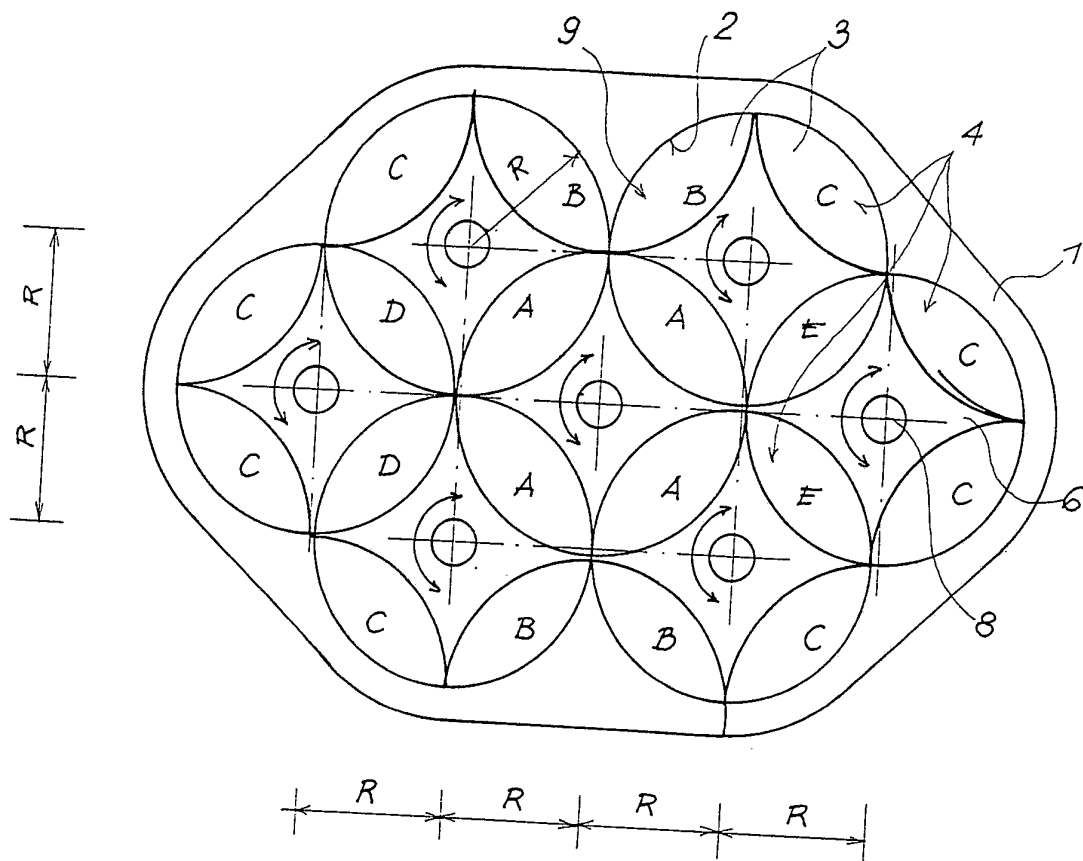
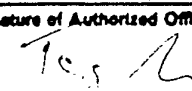


Fig. 7.

INTERNATIONAL SEARCH REPORT

International Application No PCT/HU 89/00037

I. CLASSIFICATION OF SUBJECT MATTER (if several classification symbols apply, indicate all) ⁶		
According to International Patent Classification (IPC) or to both National Classification and IPC		
IPC ⁵ : A 63 F 9/08		
II. FIELDS SEARCHED		
Minimum Documentation Searched ⁷		
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Int.Cl. ⁵	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 ⁸		
III. DOCUMENTS CONSIDERED TO BE RELEVANT ⁹		
Category ¹⁰	Citation of Document, ¹¹ with indication, where appropriate, of the relevant passages ¹²	Relevant to Claim No. ¹³
X	DE, A, 2 120 391 (PIERSON) 18 November 1971 (18.11.71), see fig. 1-11.	(1,2)
X	GB, A, 2 116 050 (MOSHATOS) 21 September 1983 A (21.09.83), see fig. 1-8.	(1) (2)
A	FR, A1, 2 538 261 (SANANES) 29 June 1984 (29.06.84), see fig. 1-7.	(1,2,3)
A	DE, A1, 3 143 735 (LIEKE) 19 May 1983 (19.05.83), see fig. 2,3.	(1)

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IV. CERTIFICATION		
Date of the Actual Completion of the International Search	Date of Mailing of this International Search Report	
03 October 1989 (03.10.89)	13 October 1989 (13.10.89)	
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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 Patentdokumente angegeben. Diese Angaben dienen nur zur Unterrichtung und erfolgen ohne Gewähr.

Annex to the International Search Report on International Patent Application No. PCT/HU 89/00037

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°.

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Im Recherchenbericht angeführtes Patentdokument 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
DE-A - 2120391	18-11-71	CA-A1- 936554 DE-U - 7116082 FR-A5- 2090732 GB-A - 1275040 JP-B4-53036373 US-A - 3655194	06-11-73 23-08-73 14-01-72 24-05-72 02-10-78 11-04-72
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FR-A1- 2538261	29-06-84	None	
DE-A1- 3143735	19-05-83	None	

For more details about this annex: see Official Journal of the European Patent Office, No. 12/82.