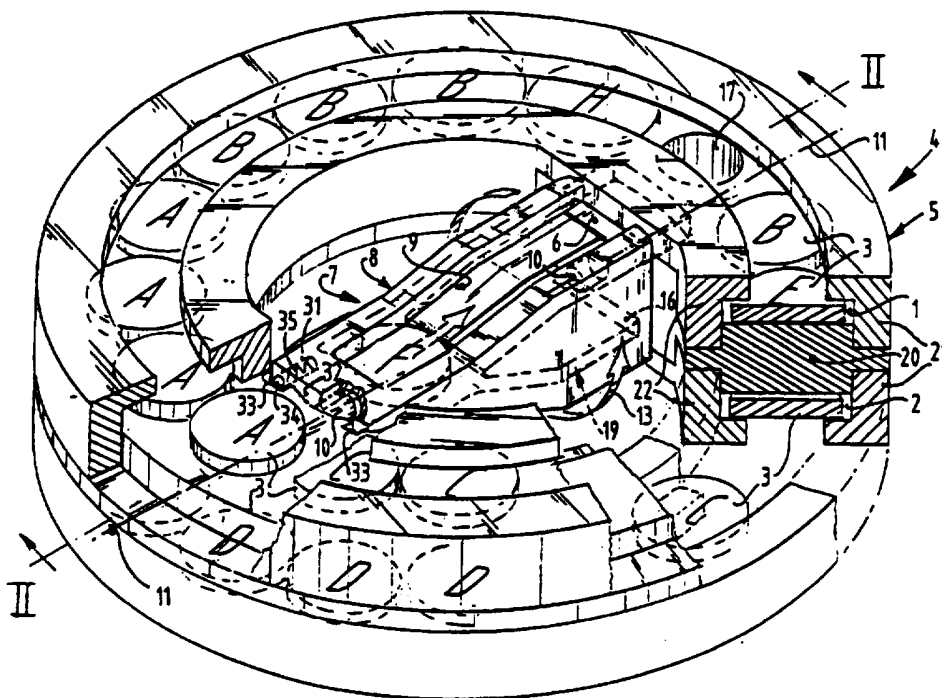




<p>(51) International Patent Classification <sup>6</sup> : <b>A63F 9/08</b></p>	<p><b>A1</b></p>	<p>(11) International Publication Number: <b>WO 96/08296</b></p> <p>(43) International Publication Date: 21 March 1996 (21.03.96)</p>
<p>(21) International Application Number: PCT/EP95/03519</p> <p>(22) International Filing Date: 6 September 1995 (06.09.95)</p> <p>(30) Priority Data: 9400818 12 September 1994 (12.09.94) BE</p> <p>(71) Applicant (for all designated States except US): DEBERGH, Josepha, Wendy, Jules [BE/BE]; Spelverstraat 11a, B-3740 Bilzen (BE).</p> <p>(72) Inventor; and (75) Inventor/Applicant (for US only): DEBERGH, Ludo, Arthur, Marie, Jules [BE/BE]; Spelverstraat 11a, B-3740 Bilzen (BE).</p> <p>(74) Agent: KONINGS, Lucien, Marie, Cornelis, Joseph; Arnold &amp; Siedsma, Sweelinckplein 1, NL-2517 GK The Hague (NL).</p>		<p>(81) Designated States: AM, AT, AU, BB, BG, BR, BY, CA, CH, CN, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IS, JP, KE, KG, KP, KR, KZ, LK, LR, LT, LU, LV, MD, MG, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, TJ, TM, TT, UA, UG, US, UZ, VN, European patent (AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG), ARIPO patent (KE, MW, SD, SZ, UG).</p> <p><b>Published</b> With international search report. Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.</p>

(54) Title: GAME DEVICE



(57) Abstract

The invention provides an interesting game device with which it is possible to enjoy for a longer time the suspense of working out the set problem. The game device according to the invention is characterized by at least two circuits, by a plurality of marking carriers received in the circuits and each having at least two surfaces on which a marking is arranged and by switching means for transferring marking carriers from the one circuit to the other and vice versa and for turning over the marking carriers.

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**GAME DEVICE**

The invention relates to a game device as claimed in claim 1.

Such a game device is known from SU-1146071. The marking carriers consist therein of differently coloured balls.

The invention provides a more interesting game device with which it is possible to enjoy for a longer time the suspense of working out the set problem.

The game device according to the invention has the feature as according to claim 1.

The invention and various embodiment variants thereof will be elucidated with reference to drawings in the description following hereinafter. Therein:

Figures 1 and 4-6 show perspective views of different embodiment variants of the game device according to the invention;

Figure 2 shows a cross section along line II-II of figure 1; and

Figure 3 shows a cross section through yet another embodiment variant.

The game device 4 of figure 1 comprises as preferred embodiment an annular housing 5 which in reality is half the size of the dimensions shown in the drawing and is therefore handy for travelling. In the housing 5 are situated a first circuit 1 and a second circuit 2 which are round, are disposed one above the other, which are each dimensioned to provide space for twelve discs 3 and each have a gate 6, 16 for allowing in and out the discs 3. The discs 3 form marking carriers which carry a marking on each side, for instance a determined colour, letter, number or image, which letter, number or image is preferably recognizable by touch for blind people.

The invention will be described on the basis of letters, although preference is given to colours.

The game device 4 further comprises switching means 7, consisting in figures 1 and 2 of a switch 8 which is

rotatable round a diametrical axis 11, i.e. round pins 10, from a first position wherein a passage 9 communicates with the gate 6 and a passage 19 communicates with a gate 16 into a second reversed position wherein passage 5 9 communicates with gate 16 and passage 19 communicates with gate 6. Passages 9 and 19 comprise inclining channel portions 13 which are in continuous mutual communication at a connection 12. It is possible to simultaneously carry a disc 3 from the circuit 1 and 2 into passages 9 and 19, turn the switch 8 180 degrees from the first to the second position as according to arrow 13 and then carry the two discs 3 into another circuit 1, 2. It is also possible to carry a disc 3 via passage 9 and connection 12 into passage 19, then turn the switch 180 degrees and return the turned over disc to the first circuit 1. 15

It is also possible to park each disc 3 temporarily in a passage 9, 19 and return it to the circuit 1 respectively 2 at a different position relative to other discs incorporated in the same circuit 1, 2 in order to change the sequence. 20

All sorts of problems can be set and, by arranging a selection of markings on the discs 3, various degrees of difficulty can be incorporated into the solution of the problem.

Serving as an example is the problem that in each circuit four groups of the same letters are disposed visually, wherein no indication is given of which letters are required for this purpose. On the contrary, it is not disclosed which eight groups of four letters are present in the game such that the solution can be realized therewith. In preference four groups of five and eleven groups of four of the same letter are included in the game, wherein in each case the combination of two letters on the same disc is such that only one solution is possible. 25 30

If in this example the solution consists of 4 X B, 4 X D, 4 X E, 4 X F, 4 X G, 4 X H, 4 X J, and 4 X K, while 5 X A is present, the formation of 4 X A is then blocked if two discs with A have a letter B, D, E or F on the other side. 35

Likewise, each letter of which four representations are present falls outside the solution combination of 4 X 4.

5 However, in order to simplify the game more than one possible solution can be incorporated, while for young children it is conceivable that for instance 16 groups of four of the same animals or other images or colours are included such that the pairwise arrangement of the images per disc do not or hardly obstruct each other.

10 A viewing hole 17 is present between the two circuits 1, 2, in order, when a disc 3 is parked temporarily in switch 8, to make visible as according to arrow 18 the reverse side (top side) of the discs 3 received in the second circuit 2, and thereby their markings, when they  
15 are driven past this viewing hole with fingertips of a hand.

The housing 5 comprises a central disc 20, two outer rings 21 and two inner rings 22, each ring having an L-shaped profile, which elements are mutually adhered. The  
20 switch 8 consists of two halves which are mutually adhered while engaging round two pins forming part of the central disc 20. The circuits 1, 2 and the passages 9, 19 of switch 8 have a C-shaped profile such that discs 3 cannot fall out of the game device 4.

25 According to figure 1 a cylindrical cavity 31 is arranged in the switch 8 opposite a transverse surface 32 of the central disc 20 in which two grooves 33 are arranged. A ball 34 is arranged in the cavity together with a pressure spring 35 and in the aforementioned first and  
30 second position engages in each case in a groove 33 in order to secure these positions.

The above mentioned components of housing 5 and switch 8 can be injection moulded as releasable models in plastic.

35 The game device 4 of figure 3 is the same as in figures 1 and 2, with the understanding that the switch 8 and the passages 9, 19 and gates 6, 16 are present symmetrically and take a double form.

The game device 4 of figure 4 is the same as that of  
40 figures 1 and 2, with the understanding that:

the switch 8 is not arranged rotatably but is fixed so the discs 3 can be carried from circuit 1 to circuit 2 along fixed passages 9, 19; wherein however each circuit 1, 2 has at least one additional space more than the number of discs for inclusion required for the solution situation, i.e. in the problem of 4 X 4 each circuit 1, 2 has at least 17 disc spaces; and wherein the switch 8 has a turning cage 25 in which one disc 3 at a time can be turned over. This turning cage 25 is provided with cage bars 26 such that the discs cannot pass through them, while the discs can still be manipulated therein with fingers.

Such a turning cage 25 can optionally be arranged separately adjacently of switch 8 and connecting onto another gate of one of the circuits 1, 2.

The game device 4 of figure 5 is distinguished from that of figures 1 and 2 in that the circuits 1 and 2 are arranged in two housing parts 28 and 29 disposed adjacently of each other and mutually connected by means of the switch 8. The switch 8 is fixedly connected to housing part 29 and rotates as according to arrow 13 relative to housing part 28 and to gate 6. There is only one straight passage 30 for receiving a disc 3, which passage 30 is a continuation of gate 16. On condition that each circuit 1, 2 has an additional disc space, discs 3 can be transferred via the switch 8 and, by mutually rotating housing parts 28 and 29 relative to each other while a disc 3 is situated in the switch 8, such a disc coming from circuit 1 can be turned over and carried back.

A game device 4 can be envisaged with the form of figure 5, wherein a housing 5 with two circuits 1, 2 is coupled to another housing 5 with two other circuits 1, 2, so that this game device 4 has four circuits 1, 2 with whatever total number of discs 3 is required.

Also conceivable is a game device 4, wherein instead of two, three or four mutually adjacent housings 28, 29 are coupled to each other by means of a switch substantially in the manner of figure 5.

Although round circuits 1, 2 and round discs 3 are preferred, they may have a different shape, for instance square, preferably with rounded corners.

The number of discs 3 can vary from 16 and the  
5 problems to be set can be completely different from 8 X  
4, for instance 2 X 4 and 4 X 5 with 28 discs.

In figure 6 a ring housing piece 51 with the width  
of a disc 3 and with two parallel planes of section 50  
cutting transversely through the ring housing 5, can  
10 rotate around a central axis 52 directed transversely of  
the planes of section 50. In this case a disc 3 situated  
in the first circuit is replaced by a disc 3 situated in  
the second circuit 2. The ring housing piece 51 herein  
forms the switching means 8 for exchanging the discs 3.  
15 The ring housing piece 51 rotates on pins 53 which are  
moulded round the central disc 20. In order to selective-  
ly turn over the discs 3 a turning cage 25 is necessary.  
This can connect at one or other location, if necessary  
at the ring housing piece 51, onto a gate 6 of at least  
20 one circuit.

In addition to the drawn and described embodiments  
other alternative game devices according to the invention  
can be envisaged.

\*\*\*\*\*

## CLAIMS

1. Game device (4) comprising at least two circuits (1, 2) for a plurality of marking carriers (3) received in the circuits (1, 2), **characterized in that** the marking carriers each have at least two surfaces on which a marking (A-O) is arranged and that switching means (7) are present for transferring marking carriers (3) from the one circuit (1) to the other (2) and vice versa and for turning over the marking carriers.

2. Game device (4) as claimed in claim 1, **characterized in that** two circuits (1, 2) are arranged one above the other in an annular housing (5).

3. Game device (4) as claimed in claim 1 or 2, **characterized in that** the switching means (7) are formed by a rotatable switch (8) with two passages (9, 19) which is rotatable between a first position wherein the passages (9, 19) connect onto a gate (6, 16) of the one (1) respectively the other circuit (2) and a second position wherein the passages (9, 19) connect onto a gate (16) of the other (2) respectively a gate (6) of the one circuit (1).

4. Game device (4) as claimed in any of the foregoing claims, **characterized in that** each circuit (1, 2) contains marking carriers each having two surfaces (15) on which a marking is arranged, wherein at least one circuit is formed such that only one surface of the marking carriers (3) is visible, wherein preferably at least one local viewing hole (17) is present in order to make visible the second marking (3) of marking carriers passing along this viewing hole (17).

5. Game device (4) as claimed in any of the foregoing claims, **characterized in that** two circuits (1, 2) are arranged one above the other in an annular housing (5) and that a switch (8) is disposed diametrically inside this housing (5).



6. Game device (4) as claimed in claim 5, **characterized in that** the switch (8) is rotatable on a diametrical axis (11) of the annular housing (5).

5 7. Game device (4) as claimed in claim 6, **characterized in that** the housing 5 comprises as moulded pieces an annular dividing wall (20) separating two circuits (1, 2) and two inner rings (22) and two outer rings (21) each with L-shaped profile, and that the switch (8) consists of two halves having a diametrical connecting surface.

10 8. Game device (4) as claimed in any of the foregoing claims, **characterized in that** the circuits (1, 2) are entirely filled with marking carriers (3).

15 9. Game device (4) as claimed in any of the foregoing claims, **characterized in that** each circuit comprises sixteen marking carriers (3) which are marked with different markings such that it is possible to place in each circuit (1, 2) four groups of marking carriers (3) with the same visible marking.

20 10. Game device (4) as claimed in claim 9, **characterized in that** the following arrangement of groups of different markings appears on the marking carriers:

four groups of five and  
eleven groups of four.

\*\*\*\*\*



FIG. 2

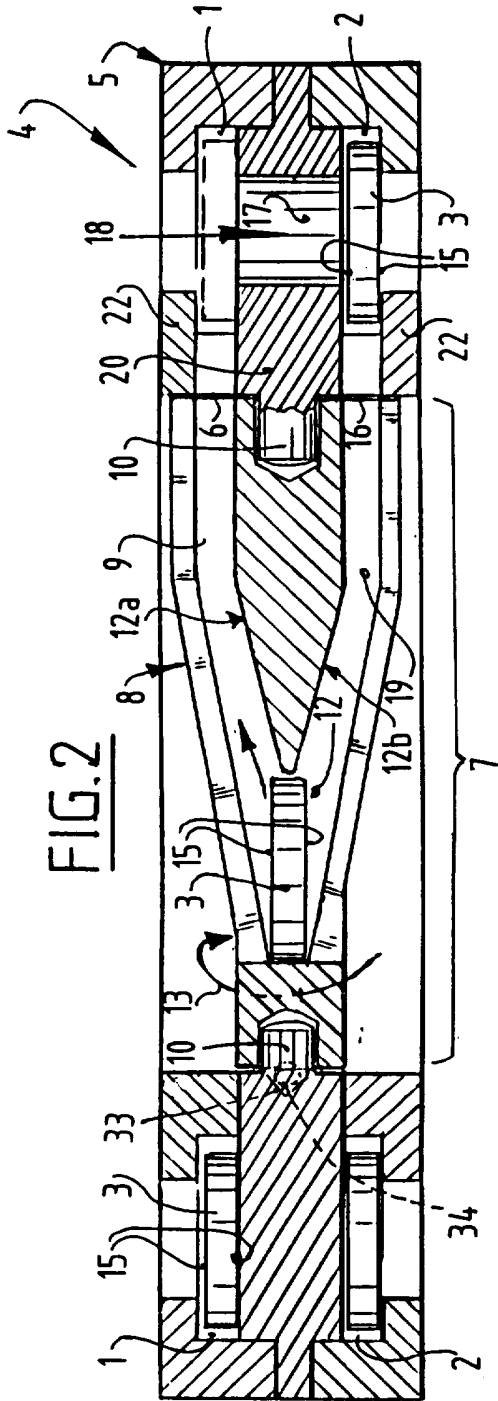
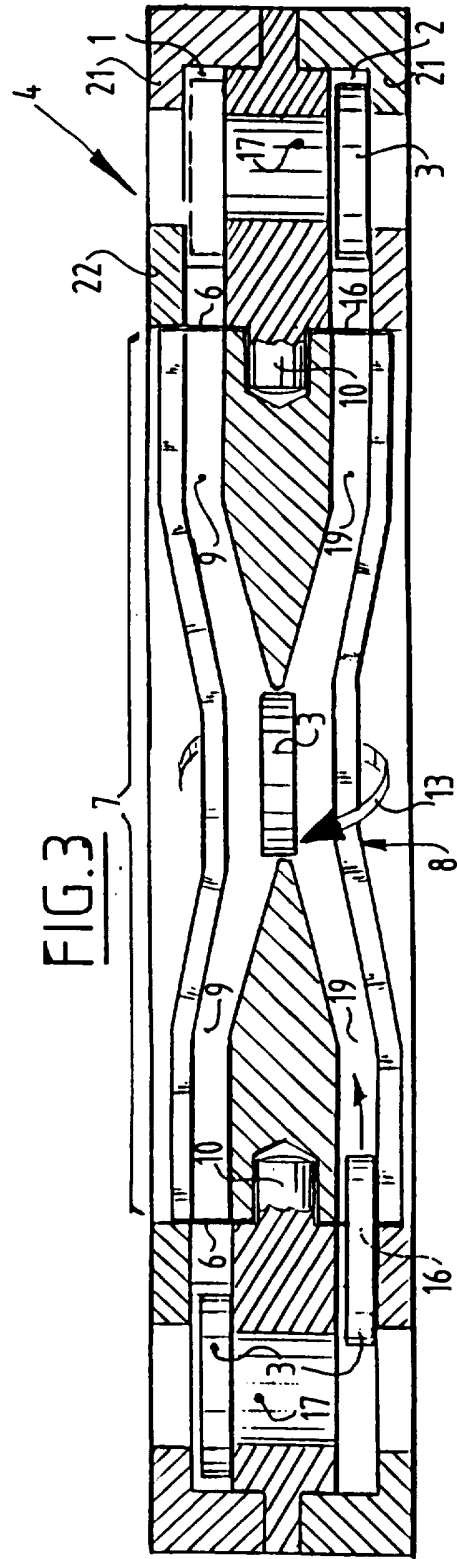


FIG. 3



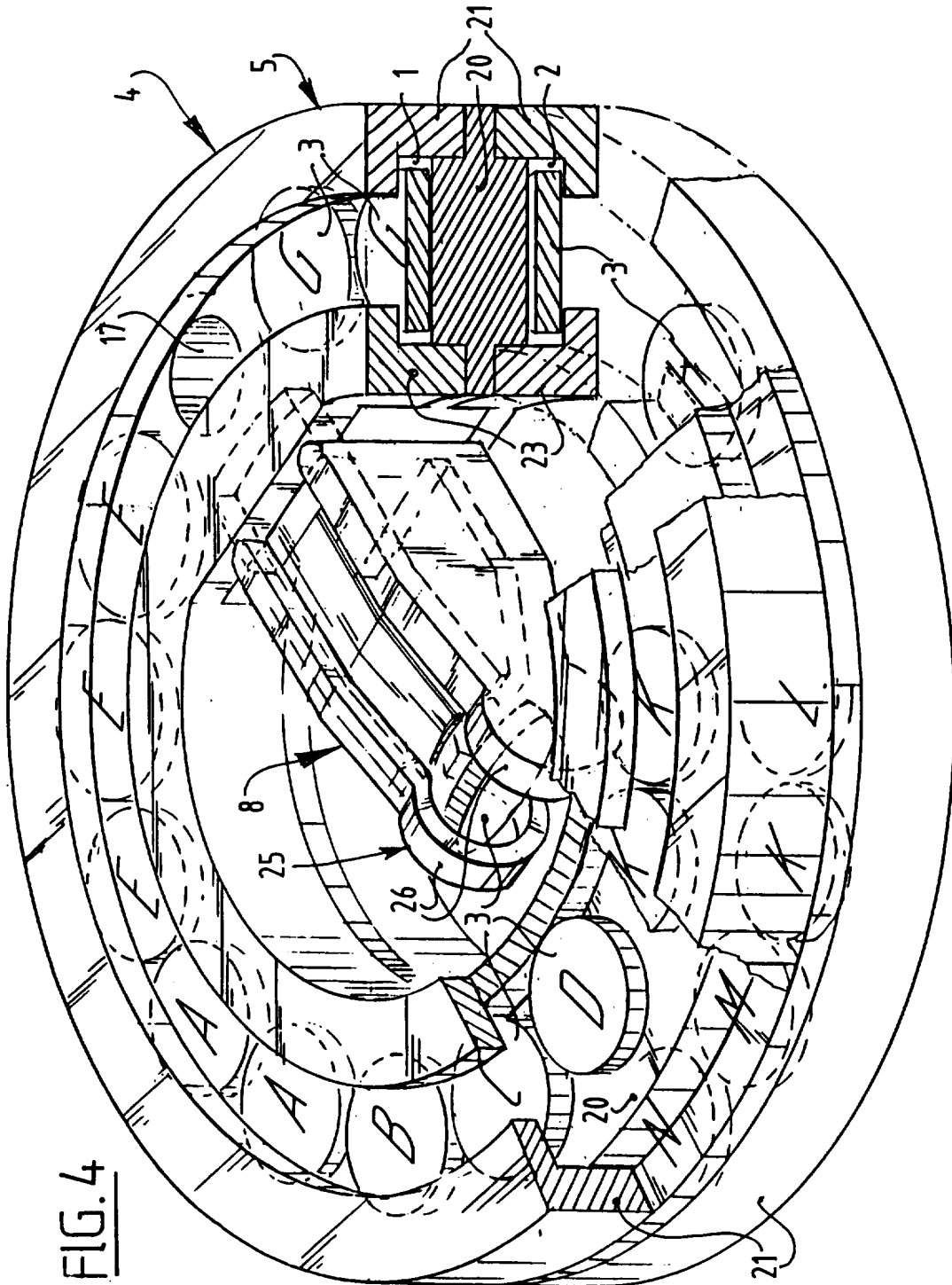


FIG. 4

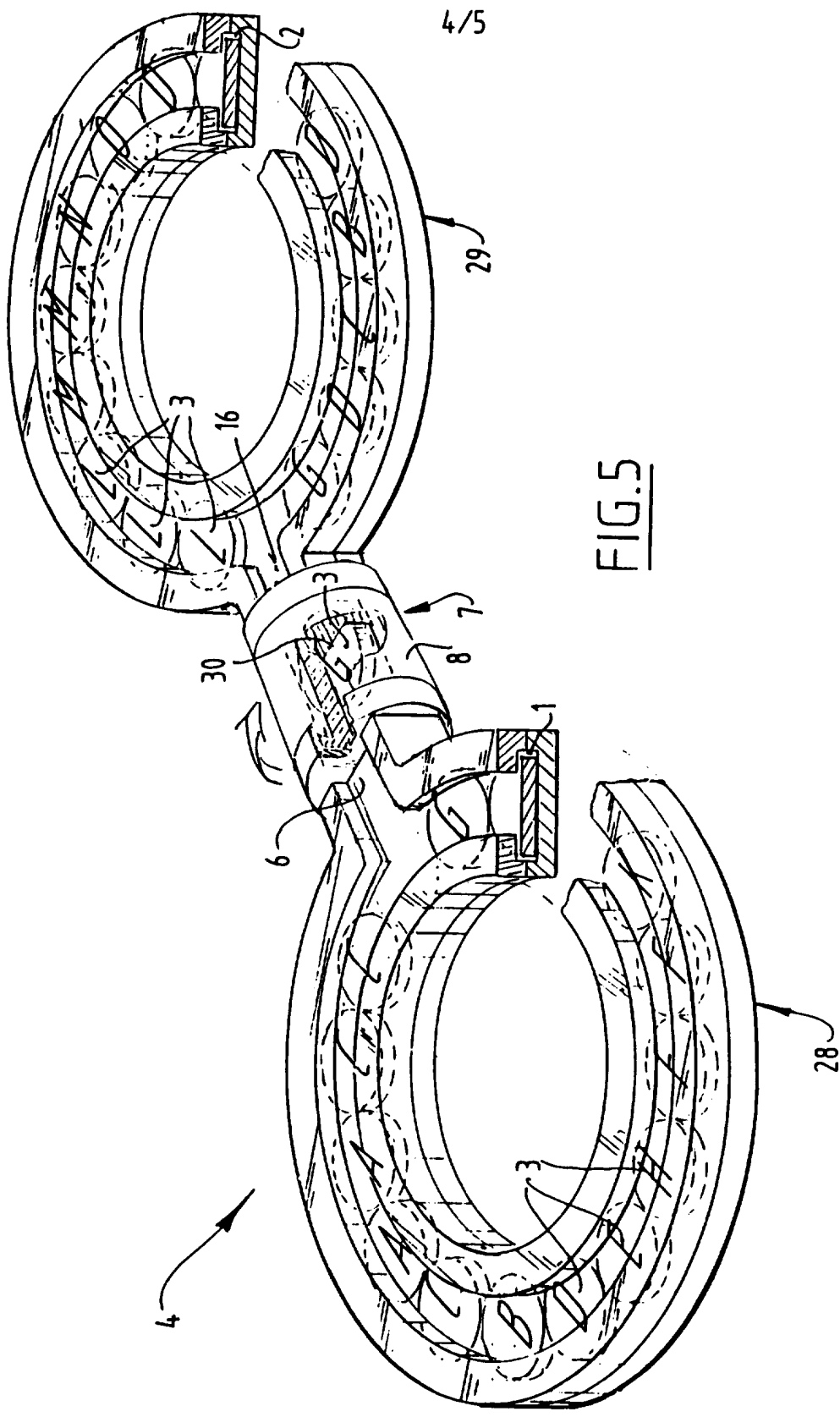


FIG. 5

4/5

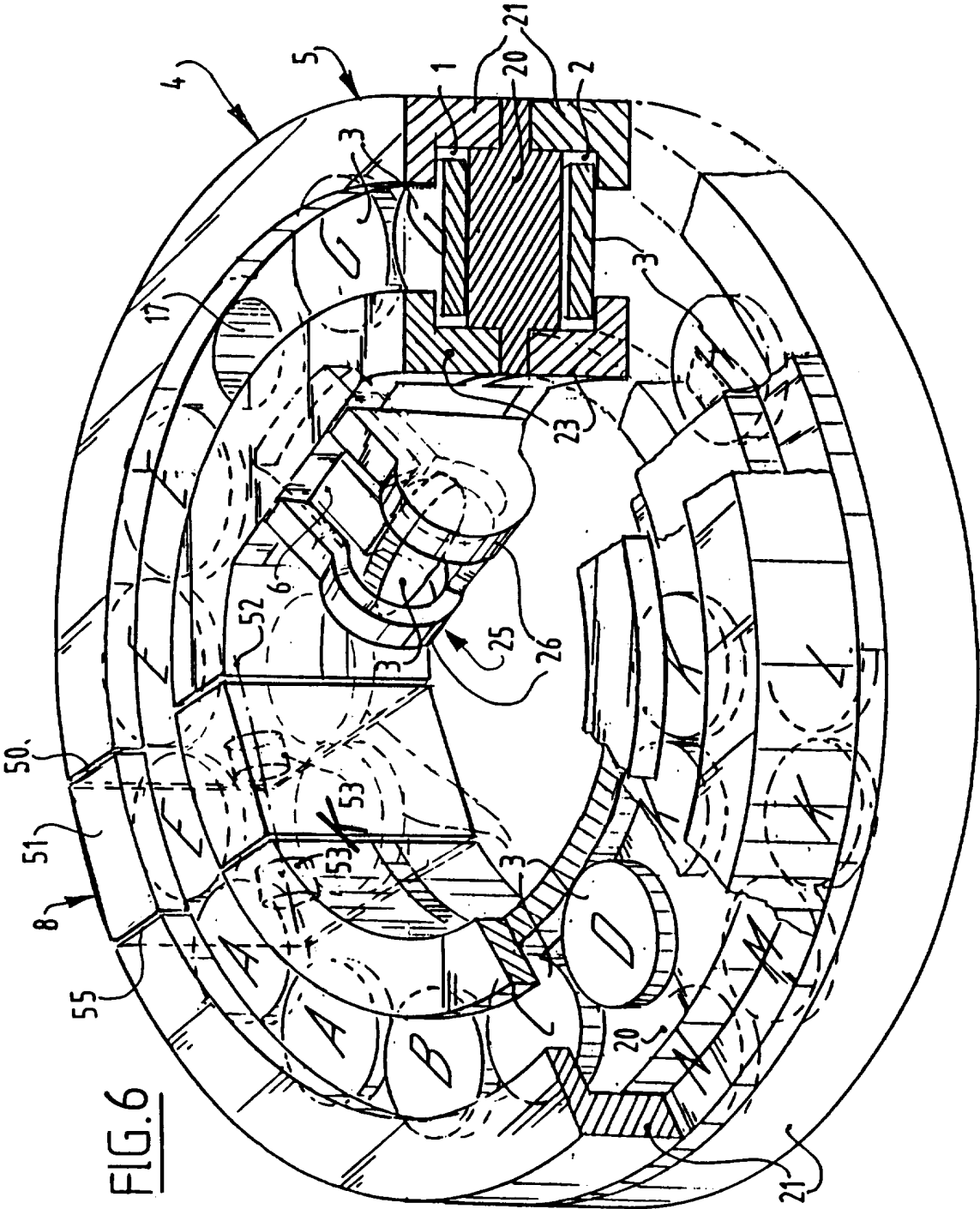


FIG. 6

# INTERNATIONAL SEARCH REPORT

Int. Application No  
**PCT/EP 95/03519**

**A. CLASSIFICATION OF SUBJECT MATTER**

**IPC 6 A63F9/08**

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)

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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 practical, 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	<p><b>DATABASE WPI</b>                      Week 8540                      Derwent Publications Ltd., London, GB;                      Class 1, AN 85-248024                      &amp; SU,A,1 146 071 (ULYANOVSKI)                      cited in the application                      see abstract</p> <p style="text-align: center;">---</p>	1
A	<p>US,A,3 462 149 (GRUSIN) 19 August 1969                      see column 4, line 9 - line 16</p> <p style="text-align: center;">---</p>	1
A	<p>US,A,3 727 916 (MILLER) 17 April 1973                      see column 3, line 12 - line 22                      see column 4, line 61 - line 64; claim 1</p> <p style="text-align: center;">---</p>	1
A	<p>US,A,1 560 921 (VON BÜLTZINGSLÖWEN) 10                      November 1925</p> <p style="text-align: center;">---</p>	
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Date of the actual completion of the international search

**8 January 1996**

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
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A	WO,A,89 07478 (TOUKOMIES) 24 August 1989 -----	



INTERNATIONAL SEARCH REPORT

Inter. Patent Application No  
PCT/EP 95/03519

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US-A-3462149	19-08-69	NONE		
US-A-3727916	17-04-73	NONE		
US-A-1560921	10-11-25	NONE		
WO-A-8907478	24-08-89	AU-B-	3040989	06-09-89
		EP-A-	0422001	17-04-91
		US-A-	5090700	25-02-92
		JP-T-	3502652	20-06-91