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(54) Structure for games of combinatorial skill.

(57) The structure of the game (1) substantially comprises a base (2) provided with a pair of circular sliding tracks (11, 12) which cross in two points The circular sliding tracks (11, 12) are occupied by two sets of sliding pieces (6, 6A) which, according to as the player acts on two selector wheels (3, 4), change their sliding tracks at said crossing points. Each sliding piece (6, 6A) is provided with distinctive marks, which make it possible an ordered sequence of said sliding pieces to be defined. The skill of the player is expressed by the same player being capable, by starting from a disordered arrangement of the sliding piece (6, 6A) along the circular sliding tracks (11, 12) of returning said sliding pieces back to a pre-established ordered arrangement.

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STRUCTURE FOR GAMES OF COMBINATORIAL SKILL

The present invention relates to a structure for games of combinatorial skill, in particular of the type comprising pieces moveable inside the interior of the same structure.

Games of combinatorial skill are already known, which comprise pieces capable of changing their mutual position along obliged paths.

However, the structure of such games does not make it possible a range of solutions of gradually increasing difficulty to be organized, so as to enable most people to have a rewarding access to such games.

The purpose of the instant invention is of providing a structure for combinatorial games, capable of obviating the above said drawbacks.

Such purposes are achieved by a structure for games of ombinatorial skill in particular of the type comprising pieces moveable inside the interior of the same structure, characterized in that it comprises at least one pair of circular sliding tracks occupied by said moveable pieces, with said tracks so intersecting as to make it possible the moveable pieces which occupy them to change the track they slide along.

The game structure according to the instant invention makes it possible a range of solutions of gradualllly increasing difficulty to be organized.

For example, by colouring with two or more colours different portions of moveable pieces and simultaneously numbering said portions with identical sets of numbers, a plurality of solutions of the game can be arranged Some of said solutions are cited herein in the following for exemplifying purposes

A first solution of the game can be, e g., that solution according to which all of the moveable pieces of a same colour are gathered as a group on a same track.

A second solution can be that solution according to which the moveable pieces are ordered on one single track as a function of their numbers, and independently from their colours.

According to a third solutions the moveable pieces can be ordered, e.g., on a plurality of tracks according to their relevant numberings, and independently from their colours.

According to a fourth solutions the most difficult one, the moveable pieces can be ordered on a plurality of tracks, with the relevant piece numberings and the relevant colours being respected.

Of course, a particularly imaginative player will be able to devise solutions derived from variants and/or combinations of the above solutions, in which, e.g., the player should gather all of the moveable pieces marked with odd numbers or all of the moveable pieces marked with even numbers on one single track -- in an either ordered or not ordered arrangement; or in which the player has to put the moveable pieces in an ordered arrangement respecting their number sequence, but alternating their colours, and so on.

The present invention is disclosed in the following for merely exemplifying, non-limitative purposes by referring to the hereto attached drawing tables, which illustrate one of the possible forms of practical embodiments of the game.

Figure 1 shows a first, exploded plan view of a structure for a combinatorial game according to the present invention;

Figure 2 shows a second, exploded plan view in which the components of the game structure have been overturned by 180° in order to show their surfaces not visible in Figure 1;

In Figures 2 and 3, for the sake of simpleness, the structurally identical elements used many times in order to build the structure are illustrated once only;

Figure 3 shows a front view of the game structure assembled and ready for use;

Figure 4 shows a rear view of the game structure assembled and ready for use;

Figures 5 -7 schematically show alternative forms of practical embodiment of the game according to the present invention.

Referring to Figures 1-3, the game structure according to the present invention, generally indicated with the reference numeral 1 and simply called in the following as the "game", comprises a base 2, a first selector wheel 3 and a second selector wheel 4, a first cover element 5, a first set of moveable pieces 6 and a second set of moveable pieces 6A, a first pin 7 and a second pin 8, a first reference element 9 and a second reference element 10, a slipping-preventing gasket 39.

The base 2 comprises a first obliged-sliding track 11 and a second obliged-sliding track 12, of substantially circular development. The firs sliding track 11 and the second sliding track 12 are so concatenate, as to intersect in two points, and define a first inner circular portion 44 and a second inner circular portion 45, each of which is on the inner side relatively to the relevant sliding track.

The first inner circular portion 44 on the inner side relatively to the first sliding track 11, and the second inner circular portion 45 on the inner side relatively to the first sliding track 12 respectively comprise a first housing 13 and a second housing 14 respectively for the first reference element 9 and for the second reference element 10.

The first inner circular portion 44 furthermore

comprises at its centre a first shaft 15 housed inside a first bore 16. The first shaft 15 has an outer diameter of such a size as to be able to rotatably support a first hub 17 provided on the first selector wheel 3.

The first shaft 15 is axially provided with a first blind bore 22 whose inner diameter is such as to be capable of housing, with the due interference, the first pin 7.

The second inner circular portion 45, on the contrary, is provided at its centre with just a second bore 18 whose inner diameter is such as to be capable of housing a second shaft .19 provided on the first cover element 5.

The second shaft 19, provided on said first cover element 5, has such an outer diameter as to be capable of supporting, standing inside the second bore 18, a second hub 21 provided on the second selector wheel 4.

The second shaft 19 is provided with a second blind bore 20 of such a diameter as to be capable of housing, with the due interference, the second pin 8.

The first obliged-sliding track 11 and the second obliged-sliding track 12 respectively comprise first side walls 23 and second side walls 24, between which a first fixed wall 25 and a second fixed wall 26, and a first moveable wall 27 and a second moveable wall 28 are interposed.

The second fixed wall 26 is provided on the first cover element 5, and the first fixed wall 25 is provided on the base 2.

This arrangement is due to the fact that, owing to structural requirements, the second cover element, not indicated by a reference numeral of its own, was made as one single piece with the base 2, so as to constitute one single piece with it.

Both of said moveable walls 27 and 28 are provided on the relevant selector wheels 3, 4 and respectively comprise at least one first spacer pin 29 used in order to space the moveable pieces 6, 6a from each other and at least one second spacer pin 30 also usd in order to space the moveable pieces 6, 6A from each other.

The distance existing between two spacer pins 29, 30 adjacent to each other is slightly longer than the maximum dimension of any moveable pieces 6, 6A; inasmuch as said moveable pieces 6, 6A have a plan of circular shape, such a dimension corresponds to the diameter of said moveable pieces.

Both the first selector wheel 3 and the second selector wheel 4 respectively comprise a first circumferential crenelation 31 and a second circumferential crenelation 32 comprising merlons 43 and intermediate spaces 42.

The intermediate spaces 42 respectively engage with a first tooth 34 and a second tooth 35, in such a way that when the game is assembled each selector wheel 3, 4 can take, by sequential indexing movements, a discrete set of defined positions.

The first circular sliding track 11 and the second circular sliding track 12 respectively run, after their intersections, through the second inner circular portion 45 and the first inner circular portion 44. The first inner circular portion 44 comprises at least one opening, and in the case in points three openings 41, such as to make visible the corresponding moveable pieces -- with these "visible" pieces being hence ideally separated from the other ones.

Such an element, in combination with reference elements provided on said moveable pieces, makes it possible further schemes of ordered arrangement of the same moveable pieces to be defined.

For example, three moveable pieces can be provided, which owing to their colour(s) and/or graphic marks, can be regarded as torn off from the sets of moveable pieces 6, 6A, but which can anyway allow at least one further, particularly simple, solution to be defined, and furthermore make it possible the other solutions to be simplified, by reducing the number of the moveable pieces of at least one of the two piece sets 6, 6A. For example, if three moveable pieces are marked with the symbols "1", "X", "2", according to the casualness according to which they get arranged in correspondence of the relevant openings, the results of the football matches of the National Football Game and of the prize contest coupled with it can be prognosticated.

The base 2 comprises finally two diametrically opposite blind bores 37 having such a diameter as to be capable of housing, with interference, a pair of studs 38 provided on the inner surface of the first cover element 5 and a peripheral groove 33 with a rectangular cross-section, suitable for retaining the foot 40 of the slipping-preventing gasket 39, made from a high-adherence elastic material.

In order that the moveable pieces 6, 6A contained inside each track 11, 12 can be seen when the game is assembled, at least one of the selector wheels 3, 4 and at least one cover element not facing said wheel should be made from a transparent material; in the herein exemplified case, the first selector wheel 3 and the first cover element 5 -- which are coplanar -- are made transparent

The game is assembled according to the following modalities.

The reference elements 9 and 10 are positioned inside their relevant housings 13 and 14 provided on the inner circular portions 44 and 45 The second selector wheel 4, fastened by means of the relevant pin 8 is then associated with the base 2. The moveable pieces 6 and 6A are then distributed inside the sliding tracks 11 and 12.

The first cover element is pressure-constrained onto the base, by means of the engagement of the studs 38 inside the diametrically opposite blind bores 37. The first selector wheel 3 is fastened by means of the first pin 7.

The slipping-preventing gasket 39 is assembled. On considering the very compact structure of the game, said game structure is usually made in pocket size; it may furthermore comprise an eye (not shown in the figures), through which a small cord can be slid, in order that said game structure can be hung at the player's neck, like an ornament.

When it is completely assembled, the structure operates as follows.

By revolving, on his choice, either of the two selector wheels 3 and 4, the player can canalize the two moveable pieces which are at the points of intersection of the tracks 11 and 12, into that track whose relevant moveable wall 27 and 28 was moved If the selector wheel which had not been revolved beforehand is subsequently revolved, a new change takes place in the sliding track of the two moveable pieces which, following the previous wheel revolving, are at the intersection points. By operating in such a way, and making due allowance for the reference marks reported on the moveable pieces, the player can, by starting from a whatever arrangement of the same moveable wheels, return them back to an ordered arrangement marching any one of the target arrangements preset by him.

The reference marks reported on the moveable pieces can be of any kinds: alphabetical characters, numerical characters, colours, colour combinations, and still others. In this regard, any of the reference elements 9, 10 can be provided with reference marks or with different colours, as a function of the colour of each one of the two sets of moveable pieces 6, 6A.

Each set of moveable pieces 6, 6A can be furthermore marked with a numeral. The moveable pieces 6, 6a can be ordered according to a desired, preset arrangement, e g., as already said, both by the moveable pieces being gathered in groups according to their colours, or by them being gathered in one or more ordered group(s) according to their progressive numbering, or simultaneously according to both of said criterions, or according to further criterions.

The hereinabove disclosed and illustrated structure only comprises two sliding tracks 11 and 12 and two sets of moveable pieces 6, 6A; however, that does not exclude that the game may be given different forms of practical embodiment, e.g., of the type with three of more sliding tracks, like those shown in Figures 4-6.

Claims

1. Structure for games of combinatorial skill (1) in particular of the type comprising pieces (6, 6A) moveable inside the interior of the same structure, characterized in that it comprises at least one pair of circular sliding tracks (11, 12) occupied by said moveable pieces (6, 6A), with said tracks (11, 12) so intersecting as to make it possible the moveable pieces (6, 6A) which occupy them to change the track they slide along.

2. Structure according to claim 1, characterized in that it comprises a base (2), a first selector wheel (3) and a second selector wheel (4), a first pin (7) and a second pin (8), a first cover element (5) and a second cover element, a first set of moveable pieces (6) and a second set of moveable pieces (6A), a first reference element (9) and a second reference element (10), a slipping-preventing gasket (39), with said base (2) comprising a first sliding track (11) and a second sliding track (12), both of which have a circular development, with said sliding tracks intersecting in two points.

3. Structure according to claim 2, characterized in that the first sliding track (11) and the second sliding track (12) define a first inner circular portion (44) defined by the inner wall of the first sliding track (11) and a second inner circular portion (45) defined by the inner wall of the second sliding track (12), with said inner circular portions respectively comprising a first housing (12) for said first reference element (9) and a second housing (14) for said second reference element (10).

4. Structure according to claim 3, characterized in that said first inner circular portion (44) comprises at least one opening (41) through which the undelying moveable piece (6, 6A) can be seen.

5. Structure according to claim 4, characterized in that it comprises three openings (41).

6. Structure according to claim 3, characterized in that said first inner circular portion (44) comprises in correspondence of its own centre a first shaft (15) positioned inside a first bore (16), with said first shaft (15) having a diameter of such a value as to be capable of rotatably supporting a first hub (17) provided on the first selector wheel (3), with said shaft (15) being axially provided with a first blind bore (22), whose inner diameter is such as to enable said bore to house, with the due interference, a first pin (7).

7. Structure according to claim 3, characterized in that the second inner circular portion (45) is provided, at its own centre, with just a second bore (18), the diameter of which is such that said second bore (18) is capable of housing a second shaft (19) provided on the first cover element (5), with said second shaft (19) having such an outer diameter as to be capable of supporting, when said

second shaft (19) is housed inside said second bore (18), a second hub (21) provided on the second selector wheel (4), with said shaft (19) being axially provided with a second blind bore (20) the diameter of which is such that said blind bore (20) is capable of housing, with the proper interference, the second pin (8).

8. Structure according to claim 2, characterized in that the first cover element (5) can be fastened to the base (2) by means of two studs (38) provided on the inner surface of said cover element (5), with said second cover element being made as one single piece with said base (2).

9. Structure according to claim 2, characterized in that said first selector wheel (3) and said second selector wheel (4) are assebled opposite to each other and are respectively provided with at least one first spacer pin (29) and with at least one second spacer pin (30).

10. Structure according to claim 2, characterized in that the first track (11) and the second track (12) comprise first side walls (23) and second side walls (24), between which a first fixed wall (25) and a second fixed wall (26), and a first moveable wall (27) and a second moveable wall (28) are interposed, with said first fixed wall (25) being provided on the second cover element, said second fixed wall (26) being provided on said first cover element (5), said first moveable wall (27) being provided on the first selector wheel (3), said second moveable wall (28) being provided on said second selector wheel (4), and said first moveable wall (27) and said second moveable wall (28) respectively comprising at least one first spacer pin (29) used in order to space the moveable pieces (6, 6A) from each other and at least one second spacer pin (30) also used in order to space the moveable pieces (6, 6A) from each other.

11. Structure according to claim 10, characterized in that said first selector wheel (3) and said second selector wheel (4) respectively comprise a first circumferential crenelation (31) and a second circumferential crenelation (32) comprising merlons (43) and intermediate spaces (42), with said first crenelation (31) and said second crenelation (32) cooperating with a first tooth (34) and a second tooth (35).

12. Structure according to claim 1, characterized in that said first tooth (34) and said second tooth (35) are respectively housed on the second cover element and on the first cover element (5).

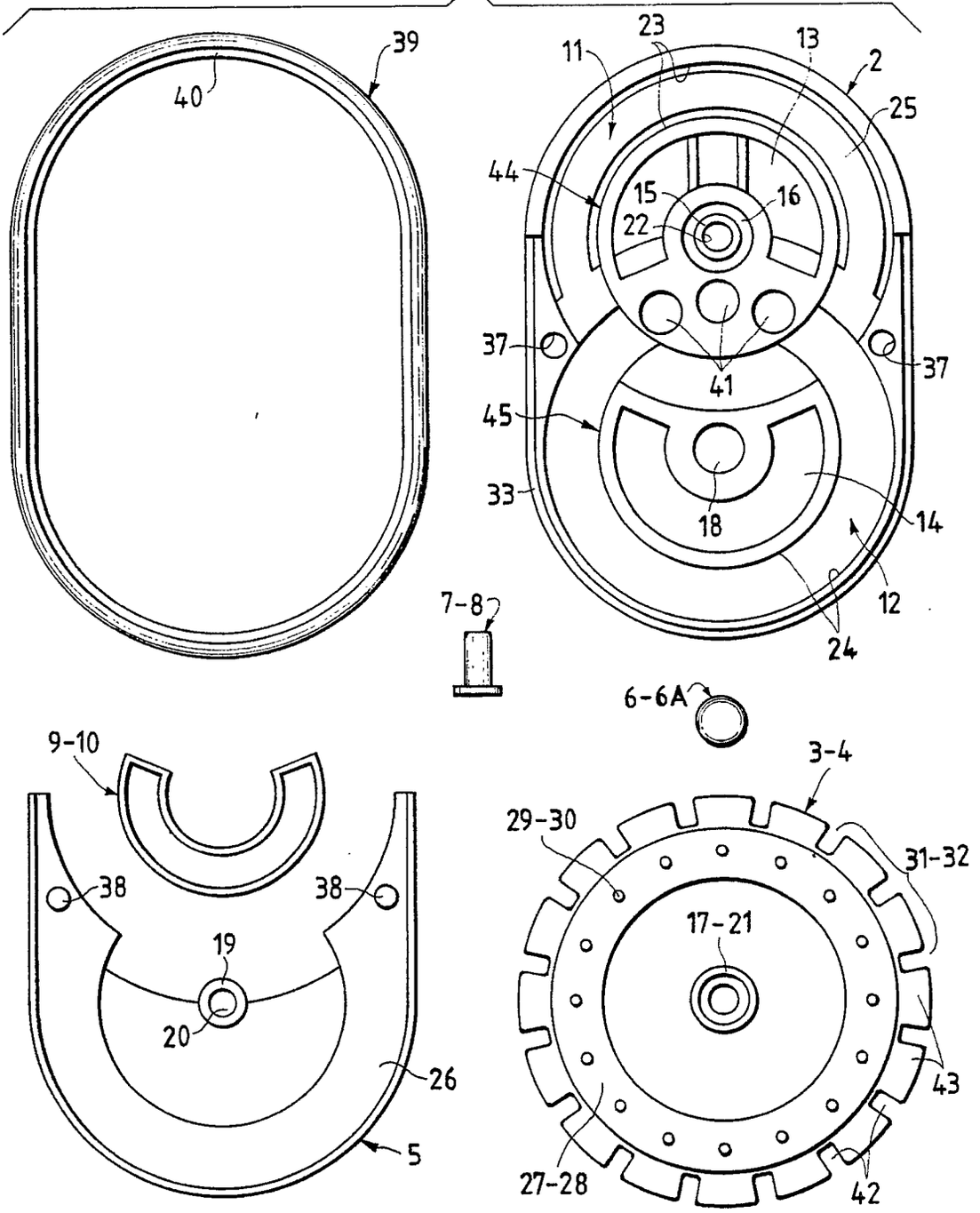
13. Structure according to claim 2, characterized in that said slipping-preventing gasket (39) comprises a gasket foot (40) engaging a peripheral groove (33) provided on the base (2).

14. Structure according to claim 1, characterized in that it comprises an eye through which cord means run, which are suitable for hanging said structure at user's neck.

15. Structure according to claim 2, characterized in that at least one selector wheel (3, 4) and at least one cover element (5) not facing said wheel are made from a transparent material.

16 Structure according to claim 15, characterized in that the first selector wheel (3) and the second cover element (5) made from a transparent material, are coplanar.

Fig.1


39
40
23
11
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22
37
37
41
45
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18
14
12
24
7-8
6-6A
9-10
3-4
29-30
31-32
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38
17-21
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5
27-28
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Fig.2

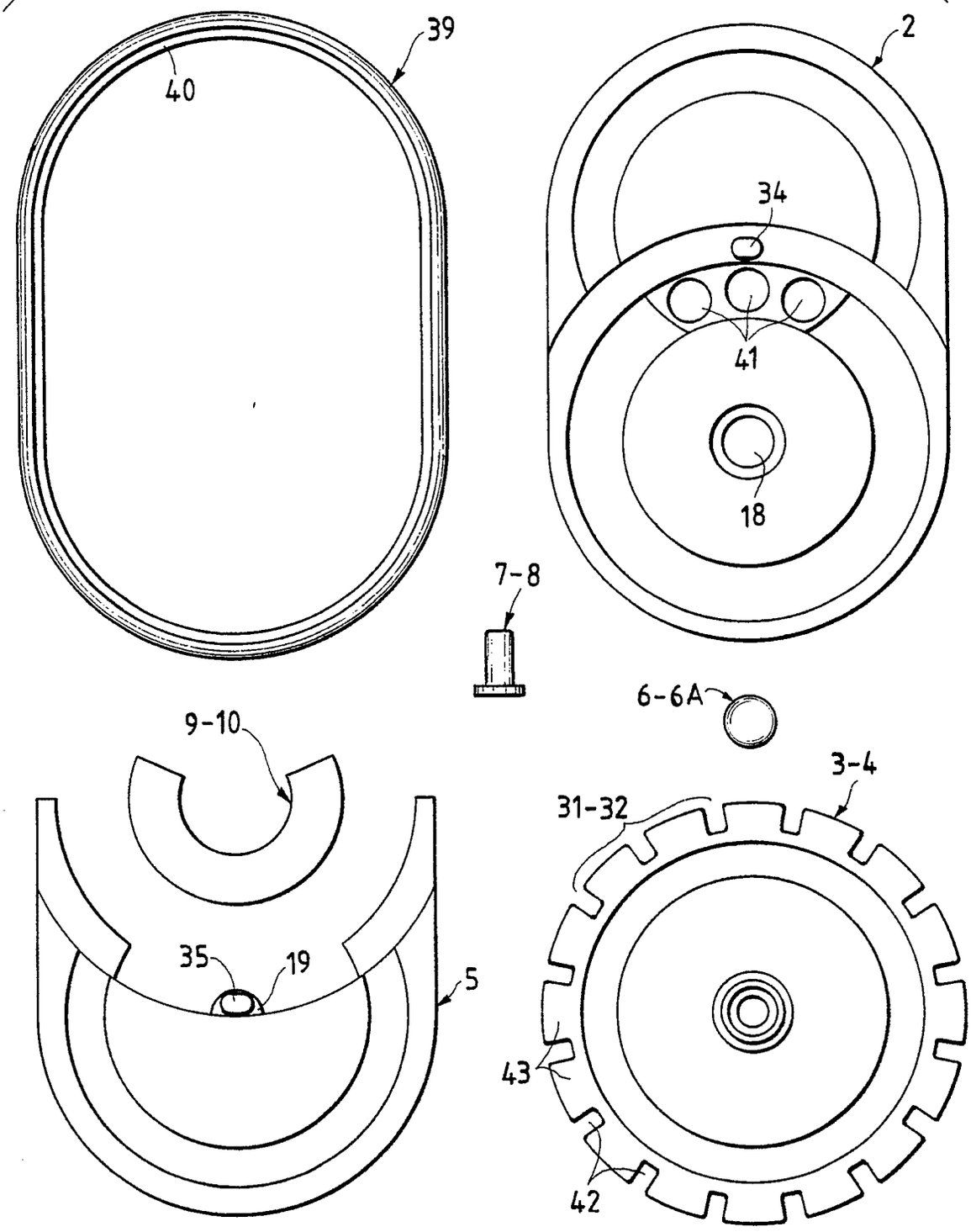


Fig.3

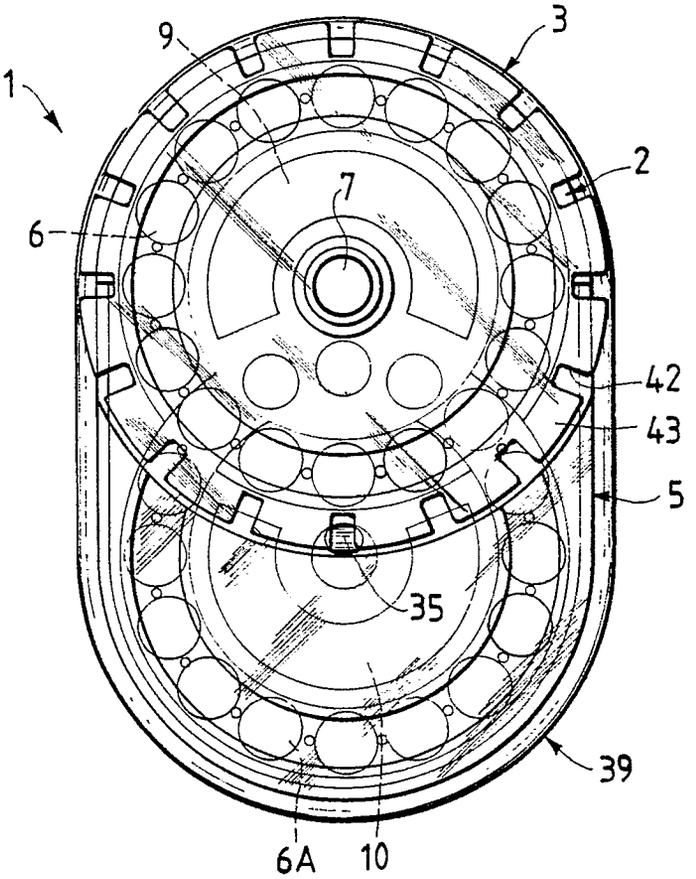


Fig.4

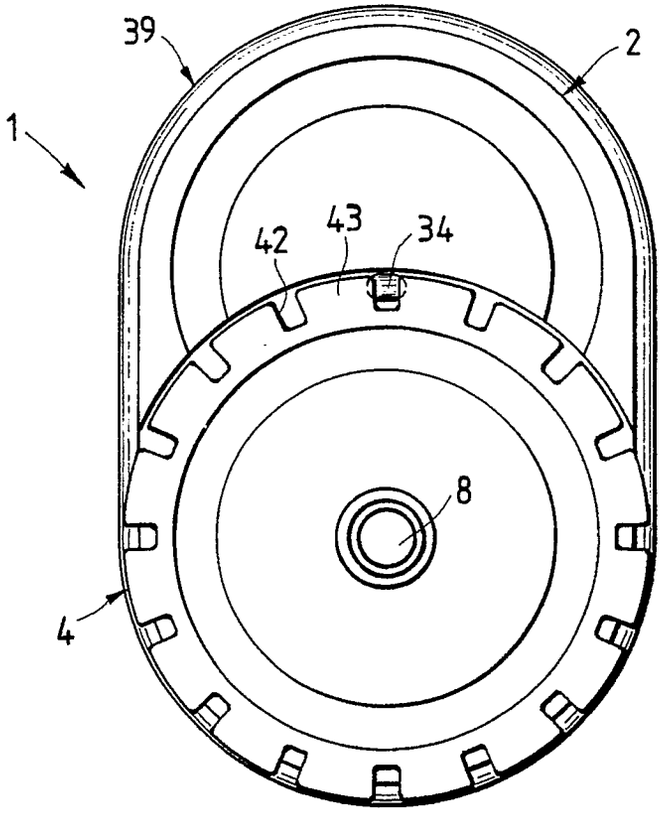


Fig.5

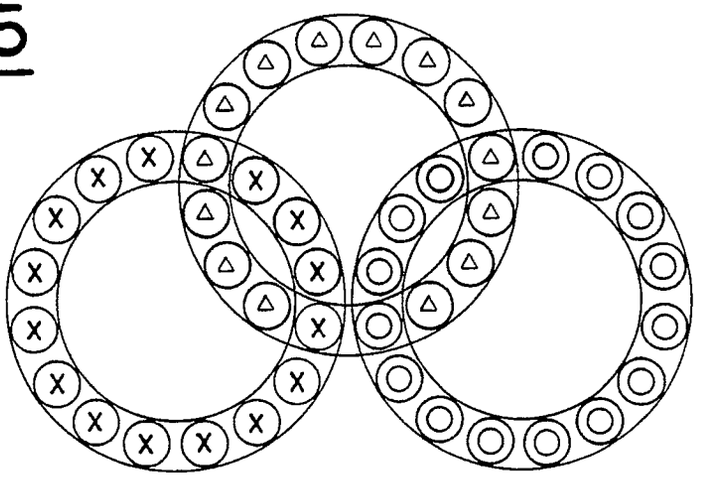


Fig.6

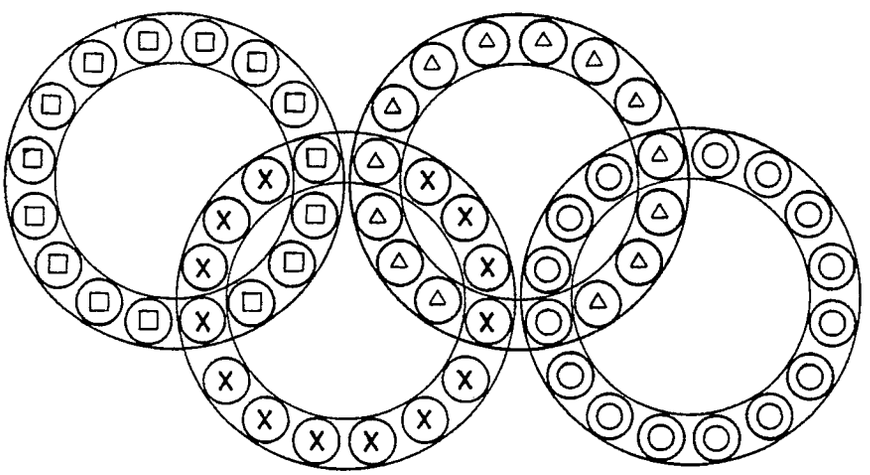
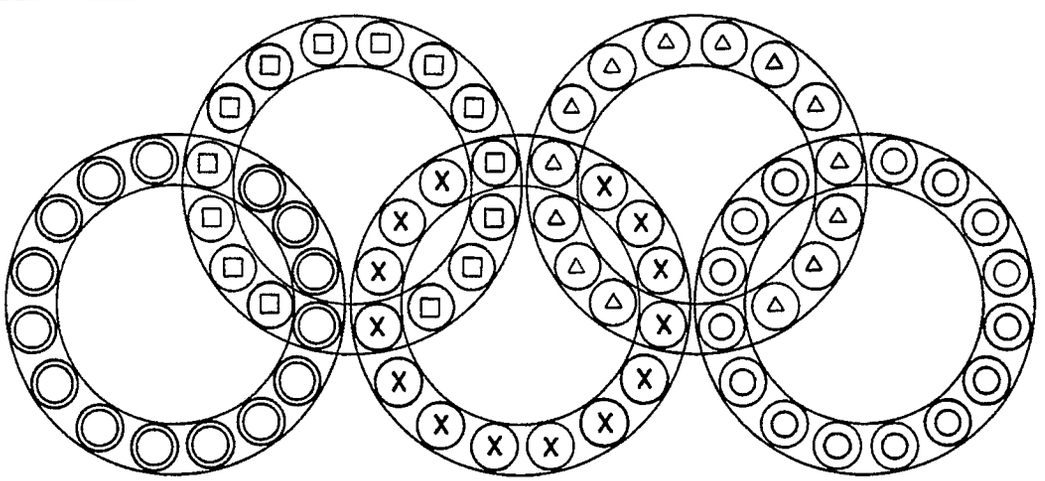


Fig.7



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EUROPEAN SEARCH REPORT

Application Number

EP 90 20 0752

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.5)
X	DE-U-8 700 530 (SPERBER) * Page 3, lines 17-21; figures *	1	A 63 F 9/08
Y		14	
Y	GB-A-2 101 897 (TOSHIBA SUGA) * Page 1, lines 122-124 *	14	
A	WO-A-8 806 472 (WEISSEN) * Page 10, lines 16-22 *	1,2	
A	US-A-4 468 033 (MINAMI et al.) * Column 3, line 62 - column 4, line 1 *	1,2	
A	EP-A-0 089 581 (KOVACS et al.)		
A	EP-A-0 050 755 (JODAL et al.)		

TECHNICAL FIELDS SEARCHED (Int. Cl.5)

A 63 F

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	05-07-1990	GLAS J.

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
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