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54 Improvements in or relating to apparatus for random selection of information.

57 This invention provides a device suitable for use as a toy or educational aid. It basically comprises a housing (4) covering two or more discs (6,7) bearing markings such as letters, numbers or other information. Viewing apertures (8) enabling a part or parts of each disc (6,7) to be seen are provided in the housing (4). The discs (6,7) are rotated at varying speeds and a reading is taken of the markings which appear in the viewing apertures (8) when the rotation ceases.

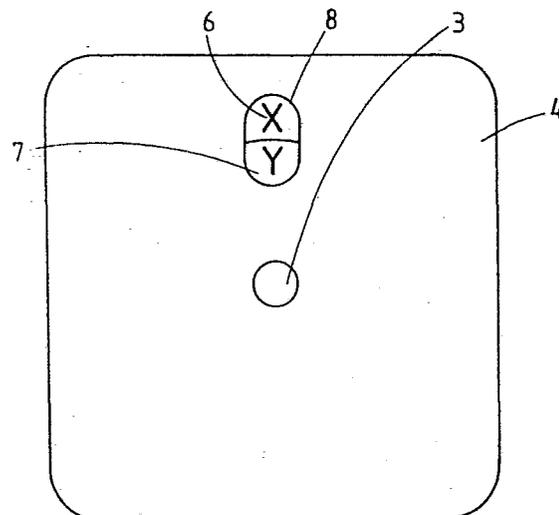


FIG. 1

The present invention relates to apparatus for the random selection of information.

The invention has as its object the provision of apparatus which can be operated to randomly select information for presentation to the operator, the randomly presented information being used, for example, as the basis of a game or for educational purposes.

... In accordance with the present invention, therefore, there is provided apparatus for random selection of information, the apparatus comprising a housing provided on one side thereof with at least one viewing aperture, or information indicator, at least two relatively rotatable co-axial discs arranged in the housing and each provided with a plurality of markings, which extend on a circular track concentric with the disc axis and which are arranged to be successively visible in conjunction with the information indicator, or through the viewing aperture or at least one of the viewing apertures on rotation of the respective disc, and a rotatable drive shaft projecting into the housing, one of the discs being rigidly coupled to the drive shaft to form a rotational assembly therewith and the other disc or at least one of the other discs being so mounted on the assembly as to be frictionally rotatable by but relative to the assembly.



Preferably both or all of the discs are readily demountable from and remountable on the drive shaft so that one or more of the discs may be replaced by substitute discs as desired.

The housing is preferably constructed as a closed unit and may consist of, for example, a shallow box in which said one side is of circular or rectangular configuration. The housing may be made of cardboard, plastic, wood, metal or any other suitable material, preferably an economical and lightweight material or combination of materials such as cardboard or cardboard and plastic. In a preferred embodiment, said one side of the housing consists of stiff cardboard, with its outer face provided with markings and/or instructional information appropriate to the purpose and playing of the game or games for which the apparatus can be used.

In certain constructions of the apparatus according to the invention, it may be possible for a substantial portion and a number of markings of one or more discs to be visible either in each viewing aperture or beyond the edges of the housing. In such circumstances an information indicator such as an arrow indicates the marking or markings to be chosen.

The or each viewing aperture may be of such a size as to permit simultaneous reading of all of the tracks, or alternatively there may be a plurality of viewing apertures for individual reading of the tracks. It is, of course, possible to provide combinations of the different types of viewing aperture.

The apertures may be provided by openings of rectangular, circular or any other suitable shape in the said one side of the housing and such openings may, if desired, be covered by a transparent material. The exact number, shape and disposition of the viewing apertures will, in general, depend on the number and disposition of the marking tracks on the discs and whether a single reading of a number of simultaneous

readings is to be taken from each track. When multiple apertures are provided for simultaneous readings from each track, the apertures may be located diametrically opposite to each other with respect to the common axis of the discs, so as to enable readings to be taken from each track in correspondingly opposite positions. The apertures may, however, be arranged in any other desired locations.

The discs may also be made of cardboard, wood, plastic, metal or other suitable material, but again an economical and lightweight material such as cardboard is preferred. The markings are preferably arranged in circular tracks at the circumferences of the discs and the discs are preferably of different diameters and so arranged in order of descending diameters towards said one side of the housing that the markings are thereby exposed to view through the viewing aperture or apertures in said one side. Alternatively, at least one of the discs can comprise a transparent portion disposed so that the markings of another disc, which is behind said one disc with respect to said one side of the housing, are rendered visible. In that case, the diameters of the discs can be the same, if so desired. It is of course possible for more than one track of markings to be printed on any one of the discs.

The disc rigidly attached to the drive shaft is preferably the disc having the largest diameter, so as to provide optimum flywheel effect in the use of the apparatus, as will be subsequently explained. The or each other disc rotationally mounted on the assembly is preferably journalled on the drive shaft and preferably spaced from the or each adjacent disc by bearing means. Thus, in a simple embodiment of the invention utilising only two discs, the larger diameter disc is rigidly attached to the drive shaft and the smaller diameter disc is journalled on the drive shaft and rests on the larger diameter disc by way of a plain thrust bearing such as a washer. When the drive shaft is rotated to spin

the larger diameter disc, the smaller diameter disc is frictionally entrained by the rotational assembly to spin at the same time but at a slower rate due to frictional slip induced by drag and to inertia differences. The diameter of the thrust bearing is preferably selected so as to provide a coefficient of friction with the smaller diameter disc that is high enough to ensure the disc is frictionally entrained by the assembly but not so high as to overcome drag induced slippage. Whilst a separate bearing such as a washer enables a particularly simple construction, the bearing means may take other forms, for example a bearing surface integral with but proud of either one of the discs.

The drive shaft is preferably provided externally of the housing with a grip, for example a knob, whereby the shaft can be rotated manually. The drive shaft is preferably journalled in a side of the housing and for preference includes a bearing surface, for example a surface of the knob or other grip, bearing on the housing side. With this arrangement, the drive shaft is located in position in the housing by its bearing surface on the one hand and the discs on the other hand.

It is preferred that the drive shaft be journalled in the same side of the housing as that provided with the bearing aperture or apertures, so that the discs can be operated and the markings viewed from the same side of the housing.

One simple embodiment of the invention is illustrated in the accompanying drawings in which:-

Figure 1 is a plan view, and

Figure 2 is an elevational view.

The drive shaft 1 consists of a wooden pin 2 which is provided at one end with a turned knob 3 bearing on the outer surface of said one side of the housing 4 and which is connected at its other end, by way of a screw or nail 5, to the disc 6 that forms the other part of the rotational

assembly. The freely rotating disc 7 rests on disc 6 by way of washer 9.

In use of the apparatus described in the foregoing, the housing is preferably placed so that the discs 6,7 are substantially horizontal and the drive shaft 1 is rotated, for example by finger pressure on the knob of the drive shaft. The disc 6 rigidly attached to the drive shaft 1 is accordingly set into rotation and, due to flywheel effect, continues to rotate at a gradually diminishing rate even in the absence of any driving force applied to the shaft. At the same time, the or each freely rotatable disc 7 is frictionally entrained by and rotated with the rotational assembly composed of the drive shaft 1 and rigidly attached disc 6, but at a slower rate or rates for the reasons previously mentioned. When two or more such freely rotatable discs are present, the first such disc receives its rotational impetus from the rigidly attached disc, the second disc from said first disc, the third disc from the second disc, and so forth, thus securing the requisite differentials in rates of rotation. These differentials can of course be readily varied by corresponding variations in the coefficients of friction concerned in the entrainment of the discs, for example by varying the diameters of the intervening bearing means, and/or by variations in the inertia of the discs, as determined by the diameters and/or weights of the discs.

When the discs 6,7 eventually stop spinning, a reading of the markings can be taken through the viewing aperture 8 or apertures and these readings deployed as the basis of a game or educational aid. A great variety of games and teaching aids can be derived from the apparatus, depending on the nature of the markings, number of discs and thus marking tracks, and the number of viewing apertures. For example, in the case of two discs, one disc can be provided with markings in the form of letters of the alphabet and the other with a series of numbers, one or two viewing apertures



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being provided. Readings of the letters and numbers taken through the viewing apertures can serve as a recognition stimulus when the apparatus is used as an elementary educational aid or can be utilised in a word game, for example formation of a word incorporating the displayed letter or letters and having the same number of letters as the displayed number or one of the displayed numbers. Alternatively, the displayed numbers alone can be used to obtain, by addition or subtraction, one of a predetermined group of numbers, the object being to achieve all of the numbers of the group by successive operations of the apparatus.

In another embodiment of the apparatus with two discs, each disc may be marked with a series of numbers, to enable the play of games or education tests involving addition, subtraction, multiplication or division of the displayed numbers. In yet another embodiment, one disc may be marked with a series of letters and the other disc with a number of subject matter titles, for example "animal", "vegetable" and "mineral", so that words can be devised starting with or incorporating a displayed letter and pertaining to a displayed classification.

It is envisaged that the discs may be replaced by other interchangeable discs from a suitable store of such discs, so that by changing discs and also possibly the "facing" of the housing a variety of purposes may be served by the basic apparatus.

When three discs are present, two of the discs may be formed for displaying respective letters and the other disc for displaying a number, for example for use in a game where a word has to be formed beginning with one letter, including the other letter and having a number of letters equal to the displayed number. The words thus formed can be used in a variety of different ways, for example in the formation of a crossword.

The foregoing are merely typical examples of markings and games that can be played utilising randomly displayed components of the markings and it will be readily apparent

that the apparatus can serve as a vehicle for a wide variety of games and educational programmes, employing any desired type of markings.

It will also be appreciated that modifications may be made to the apparatus hereinbefore described without departing from the scope of the invention.

CLAIMS

1. An apparatus for random selection of information, the apparatus comprising a housing (4) provided on one side thereof with at least one viewing aperture (8), or information indicator, at least two relatively rotatable co-axial discs (6,7) arranged in the housing and each provided with a plurality of markings, which extend on a circular track concentric with the disc axis and which are arranged to be successively visible in conjunction with the information indicator, or through the viewing aperture (8) or at least one of the viewing apertures on rotation of the respective disc, and a rotatable drive shaft (1) projecting into the housing (4), one of the discs (6) being rigidly coupled to the drive shaft to form a rotational assembly therewith and the other disc (7) or at least one of the other discs being so mounted on the assembly as to be frictionally rotatable by but relative to the assembly.

20.

2. An apparatus according to Claim 1, wherein both or all the discs (6,7) are readily demountable from and remountable on the drive shaft (1).

25.

30. 3. An apparatus according to Claim 1 or Claim 2, wherein the housing (4) is a closed unit.

4. An apparatus according to any one of the preceding claims, wherein the discs (6,7) are of different diameters and are so arranged in order of descending diameter towards one side of the housing that the markings (4) are thereby

5. exposed to view through the viewing aperture (8) or apertures in said one side.

10.

5. An apparatus according to Claim 4, wherein the disc (6) rigidly attached to the drive shaft (1) is the disc having the largest diameter.

15.

20. 6. An apparatus according to Claim 5, wherein the smaller diameter disc (7) or discs is/are spaced from the or each adjacent disc by bearing means (9).

25.

7. An apparatus according to Claim 6, wherein the bearing means (9) is a washer.

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8. An apparatus according to Claim 1, wherein at least one disc comprises a transparent portion disposed so that the markings of another disc which is behind said one disc with respect to said one side of the housing are rendered
5. visible.

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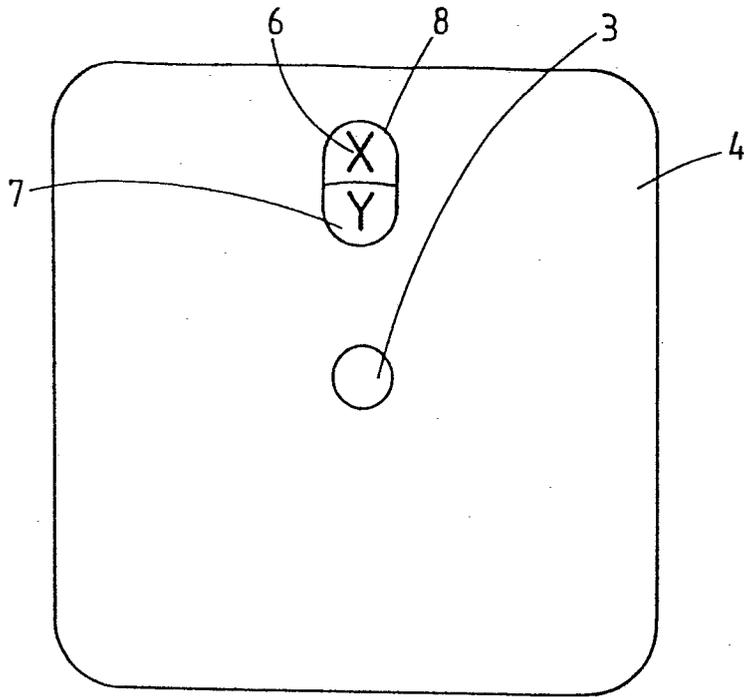


FIG. 1.

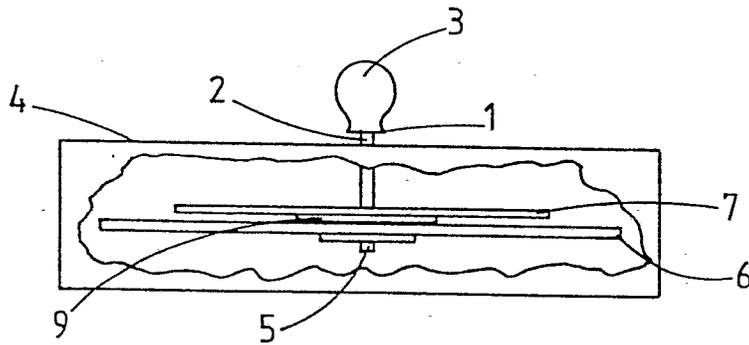


FIG. 2.



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Office

**EUROPEAN SEARCH REPORT**

0017354

Application number  
EP 80 30 0730

DOCUMENTS CONSIDERED TO BE RELEVANT			CLASSIFICATION OF THE APPLICATION (Int. Cl. 3)
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	
	<p><u>US - A - 2 565 557</u> (C.W. GUIMOND) * Figures; column 1, line 1 - column 5, line 13 *</p> <p>--</p>	1,3,4	G 07 C 15/00 A 63 F 5/04
	<p><u>FR - A - 2 082 191</u> (AUGIS MEDAILLES) * Claim and figures *</p> <p>--</p>	1,3	
	<p><u>GB - A - 923 823</u> (H.E. LEBAIGUE) * Claims and figures *</p> <p>--</p>	1,3	TECHNICAL FIELDS SEARCHED (Int.Cl.3)
A	<p><u>CH - A - 559 566</u> (M.P. MAGNANI) * Claims and figures *</p> <p>--</p>	1,3	G 07 C 15/00 A 63 F 5/04
A	<p><u>US - A - 3 810 628</u> (E.G. VIGAN) * Abstract; figures 1-4 *</p> <p>----</p>	1,3	
			CATEGORY OF CITED DOCUMENTS
			<p>X: particularly relevant A: technological background O: non-written disclosure P: intermediate document T: theory or principle underlying the invention E: conflicting application D: document cited in the application L: citation for other reasons</p>
			& member of the same patent family, corresponding document
<p><input checked="" type="checkbox"/> The present search report has been drawn up for all claims</p>			
Place of search	Date of completion of the search	Examiner	
The Hague	23-06-1980	DAVID	

