United States Patent

Zimmerman

[15] **3,680,867**

[45] **Aug. 1, 1972**

[54] **FLIP OVER GAME**

[72] Inventor: **Roger W. Zimmerman**, R.R. 6, West Bend, Wis. 53095

[22] Filed: **April 22, 1970**

[21] Appl. No.: **30,687**

[52] **U.S. Cl.** ..... **273/138 R**, 40/107

[51] **Int. Cl.** **A63f 1/00**

[58] **Field of Search** .....273/138, 153 S; 40/107, 108, 40/109, 114, 115, 67, 124

[56] **References Cited**

UNITED STATES PATENTS

1,753,786	4/1930	Hinkel	40/107
1,681,235	8/1928	Hiering	40/107
1,716,222	6/1929	Fischer	40/107
2,256,433	9/1941	Jackson et al.	40/107
587,281	7/1897	Crooks et al.	273/138RX

FOREIGN PATENTS OR APPLICATIONS

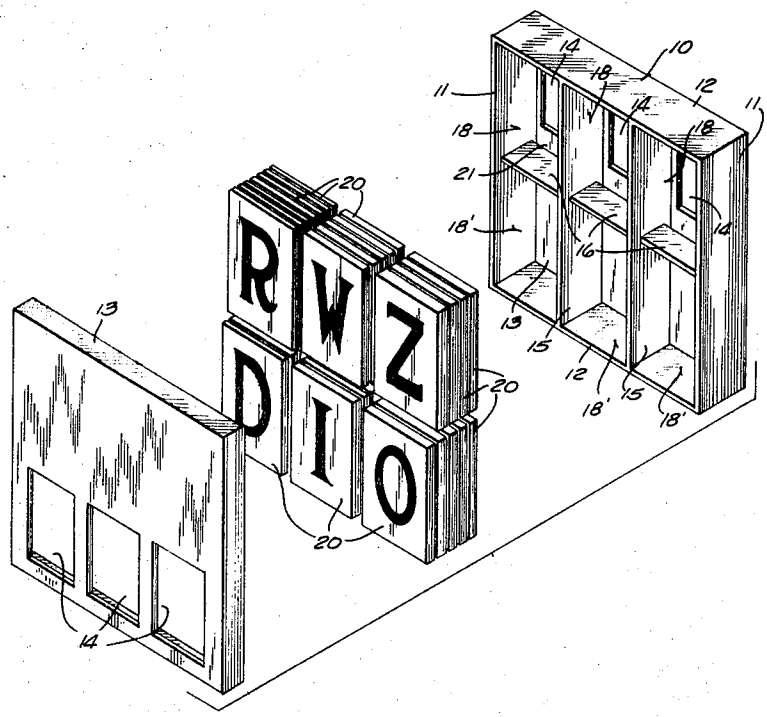
668,851	3/1952	Great Britain	40/107

Primary Examiner—Anton O. Oechsle
Assistant Examiner—Richard J. Apley
Attorney—Wheeler, House & Wheeler

[57] **ABSTRACT**

A container has pairs of cells, filled with flat plates bearing indicia and provided with windows to expose the indicia. Each pair of cells is constructed so that rotating the container 180° causes a plate to cross from one cell of a pair to the other. The indicia on the series of plates in each pair of cells are thus displayed in sequence. Adjacent pairs of cells contain differing numbers of plates to provide extremely large numbers of combinations for game playing, the number being so large as to be essentially random within any limited number of turns of the device about its horizontal axis.

7 Claims, 8 Drawing Figures



PATENTED AUG 1 1972

3,680,867

SHEET 1 OF 2

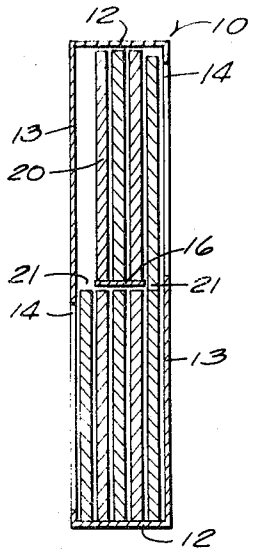


Fig. 2

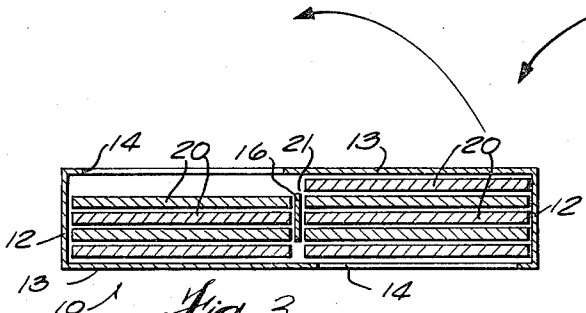


Fig. 3

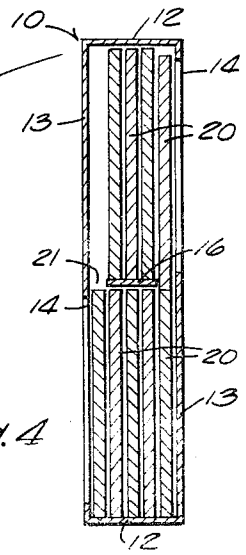


Fig. 4

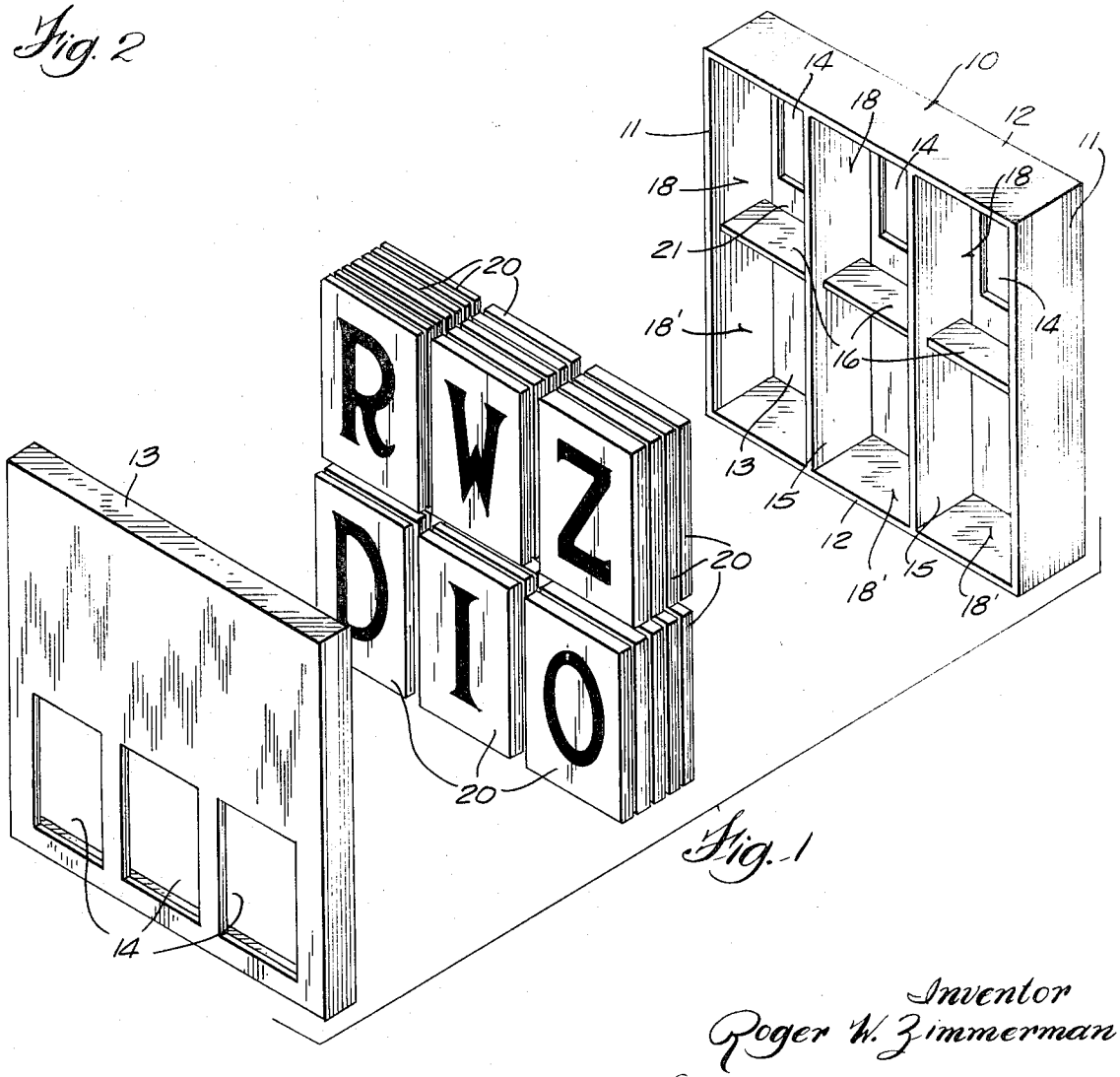


Fig. 1

Inventor
Roger W. Zimmerman
By
W. Kuhler, Wheeler, House & Clemency
Attorneys

Fig. 6

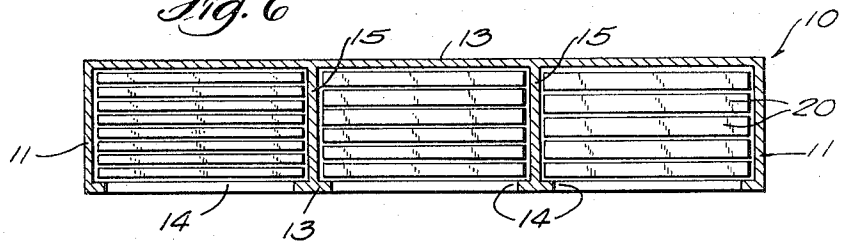
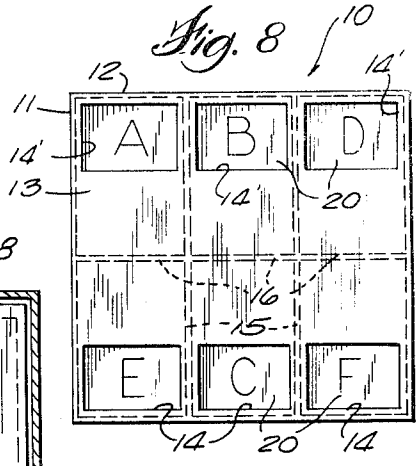


Fig. 8



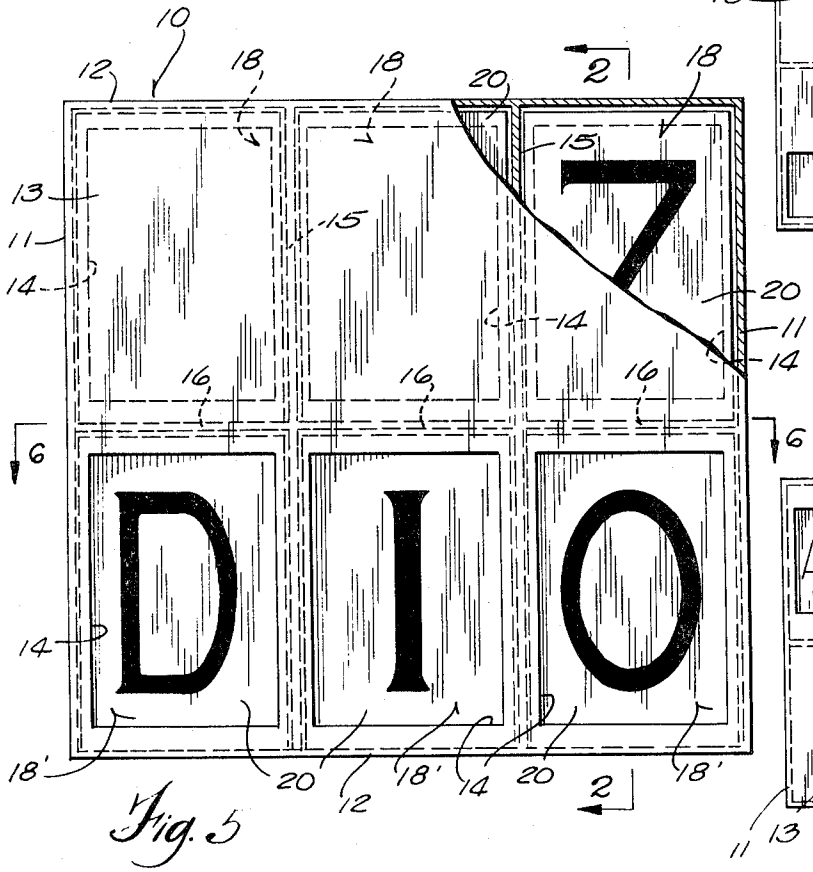
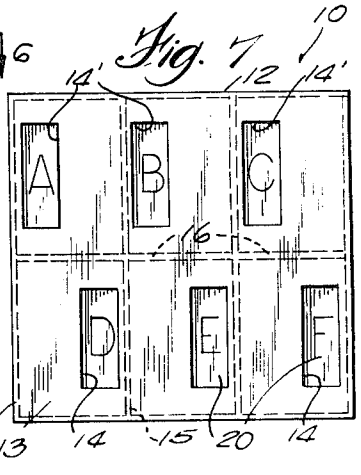


Fig. 5

Fig. 7



Inventor
Roger W. Zimmerman
By
Wheeler, Wheeler, House & Clemency
Attorneys

FLIP OVER GAME

BACKGROUND OF THE INVENTION

Desk calendars are known in which a pair of cells is provided containing plates arranged to display the days of the month in a fixed sequence. The container is rotated 180° each day to display the correct date. My device utilizes a similar physical arrangement, but it displays essentially random combinations of game playing indicia. To this end, it includes three or more pairs of cells in a single container, so that the plates, cards, or carriers for indicia in each pair of cells are changed simultaneously, for the purpose of playing any of a variety of games. The number of plates in adjacent pairs of cells is different. So far as I am aware, there is no device presently known in which a number of pairs of cells are contained in a single container display device, with pairs of cells having different abitrarily pre-selected numbers of plates, in order to provide a number of combinations large enough to permit playing a game with essentially random combinations of indicia.

THE INVENTION

The invention consists essentially of a plurality of pairs of vertically aligned apertured cells, and indicia carriers (plastic plates, cardboard or plastic cards, or equivalent indicia bearing devices) in each pair of cells, the number of carriers in at least one pair of cells being different from the number of carriers in an adjacent pair of cells. Carrier passages connect each pair of cells at the front and at the back of the stack of carriers filling the cells so that as the container is rotated, the carriers at what then becomes the uppermost ends of the cells slide from one cell to the other of each pair. The carriers within each cell are arranged in a stack, and the cells of each pair are filled by the stacks with the exception of a single space for a carrier to occupy after sliding from one cell to the other. The thicknesses of the carriers in respective pairs of cells varies in such fashion as to leave a single space despite the variation in the number of carriers in the respective pairs of cells. Likewise the width of the carrier channels varies to provide a channel wide enough for one carrier but narrow enough to block a second carrier from passage at the same time. The indicia on the carriers are so chosen and arranged as to permit the playing of games with the combinations of indicia displayed. The number of indicia available for display is doubled in one embodiment by providing two apertures per cell, one on the front and one on the back, the aperture on a given upper cell being displaced from the aperture of the lower cell of that pair on the same side to separately display two indicia on each side of a carrier. In the device shown, the indicia are letters of the alphabet, and the particular letters within a given pair of cells are chosen in order to give a high probability that any particular display will contain both vowels and consonants which may be used to form words in a word game. The words "pseudo-random", as used in the claims, means that a given set of indicia within a pair of cells is arranged in an arbitrary order not predictable by the user, but which order does not vary after the cell is closed (and so is not entirely random despite the very large number of combinations of indicia displayed before the given combination repeats).

DRAWINGS

FIG. 1 is an exploded perspective view of the device of my invention.

FIG. 2 is a vertical cross-sectional view on line 2—2 of FIG. 5 showing a single pair of cells of the device of FIG. 1 in erect position.

FIG. 3 is a view similar to FIG. 2 showing the device rotated 90° from the position of FIG. 2 in a counterclockwise direction.

FIG. 4 is a view similar to FIG. 3, showing the device in an erect position after it has been rotated 180° counterclockwise from the position of FIG. 2.

FIG. 5 is a side elevational view, with a portion broken away.

FIG. 6 is a horizontal cross sectional view taken on line 6—6 of FIG. 5.

FIG. 7 is a side elevational view similar to FIG. 5 in reduced scale, showing a modification of my device.

FIG. 8 is a view similar to FIG. 7 showing a further modi-fication of my device.

DESCRIPTION

The device shown in FIGS. 1 through 6 of the drawings consists of a container or box 10 having a pair of narrow outer vertical side walls 11 and a pair of narrow outer horizontal top and bottom walls 12. The broad front and back faces each comprise a wall 13 provided with as many windows or display openings 14 as there are pairs of cells within container 10.

Container 10 is divided by vertical partitions 15 into a number of pairs of cells, here three pairs, with each pair of cells designated generally as 18, 18', the cells of the pairs being separated by a horizontal partition 16. As best shown in FIGS. 2, 3, and 4, the horizontal partition 16 does not extend to either the front or the back face 13 of container 10; but is spaced from the inner side of each face 13 sufficiently to form a passage 21 through which a carrier 20 can slide from one cell to the other of a pair on the top of the stacks of carriers 20 in the cells.

The respective partitions 16 (which may be integral with each other, depending on construction) are of different widths, to form passages 21 of different widths for carriers 20 of different thicknesses. The edge of each partition 16 is desirably spaced equally from the two faces 13 so that in a single pair of cells the passages or slots 21, through which carriers 20 move from one cell to the other of a pair, are of equal width. Passages 21 must be wider than the thickness of one carrier but narrower than two carriers in the pair of cells joined by the particular passages. This condition may be met with partitions 16 of equal width, if the carriers 20 vary only slightly in thickness.

The respective pairs of cells 18, 18' contain carriers 20 of different thicknesses, as best shown in FIGS. 1 and 6. In each pair of cells, the carriers fill both cells, with the exception of space for one carrier to allow movement of a carrier from one cell into the other cell of the pair upon rotation of container 10. The number of carriers in each pair of cells is different from the number of carriers in the adjacent pair of cells, and preferably different from the number in any other pair.

The slots 21, which form passages connecting the pairs of cells, are slightly wider than one carrier, but not as wide as two carriers of the thickness used in the

particular pair of cells, so that only one carrier may slide from one cell to the other each time the device is inverted about its long horizontal axis.

It would be possible to support my device on a horizontal pivot in the manner in which desk calendars are supported, if desired, but this is not essential.

As shown in FIGS. 1 to 6, the windows 14 in each wall 13 are arranged in a line to expose the indicia carried by the row of carriers 20 which occupy corresponding cells of each pair of cells. The windows 14 in one face 13 are at the top of the device as shown in FIG. 1; windows 14 in the other face 13 are at the bottom and expose indicia from the other set of cells of the pairs. When inverted, as shown in FIGS. 2–4, the positions are reversed. The device is symmetrical so the inversion makes no difference except to expose new indicia on carriers 20. Each time box 10 is inverted, a carrier in each pair of cells slides through a passage 21 from a newly uppermost cell to the one vacancy left in the newly lower cell, and leaves a vacancy into which the next carrier will slide upon the next inversion. Each inversion also settles the stacks of carriers in each cell against the well 13 away from the slot 21 through which a carrier 20 will slide to assure that the one empty space will be where it is needed. The carriers 20 in each pair of cells are thus exposed to apertures 14 in sequence.

Because the windows 14 in the respective vertical walls 13 face in opposite directions, carriers 20 may preferably carry indicia on each side. Accordingly, the number of indicia is twice the number of carriers 20. Because the various pairs of cells 18 contain different numbers of carriers 20, it will require a very large number of inversions of the container 10 before the same combination of indicia will return to view. The number of combinations may be adjusted within a box 10 of a given size and number of cells either by varying the thickness of the carriers (and thus the number of carriers contained within a given pair of cells) or by making the number of plates in a pair of cells the same as, or different from, the number in another pair of cells, or by means described in connection with FIGS. 7 and 8.

For example, if one pair of cells 18, 18' contains 15 carriers 20, and a second pair of cells contains 13 carriers, and the third pair of cells contains 11 carriers, each pair of cells completes a sequential display of all indicia on the series of carriers 20 in that pair of cells at a different time. Thus the indicia displayed in apertures 14 will come from different parts of the respective series of indicia. The original display will not recur until box 10 has been inverted 180° as many times as the product of the number of indicia on the carriers in the first pair of cells ($15 \times 2 = 30$), times the number of indicia displayed by the carriers in the second pair of cells ($13 \times 2 = 26$), times the number of indicia displayed by the carriers in the third pair of cells ($11 \times 2 = 22$), or a total of 17,160 inversions. It will readily be appreciated that by adding a fourth or fifth pair of cells, each with a different number of carriers, the number of combinations available becomes larger by the product of the number of indicia in each new series. If a series of 17 carriers is added (34 indicia) 586,440 combinations are available.

As shown in FIGS. 7 and 8, a slight change in structure can be made to increase the number of indicia displayed. Each side of a carrier 20 may bear two indicia, and an additional set of display openings 14' may be provided in each wall 13, in such fashion that each cell of a pair has openings 14, 14', in both walls 13, rather than in a single wall 13. The indicia on one side of a carrier 20 are laterally (FIG. 7) or vertically (FIG. 8) offset from each other, and the display openings 14, 14' are correspondingly offset in a wall 13. Thus, in each embodiment twice as many symbols are displayed for each inversion as are displayed by the device of FIGS. 1–6. All of the symbols may be used at once, or the added symbols may form a separate set, depending on the game to be played. In the former case the number of indicia in a set is doubled, without change in the number of pairs of cells. In the latter case the number of combinations for the sets of 15 carriers, 13 carriers, and 11 carriers becomes 137,280. (15 carriers, times four indicia per carrier, equals 60 indicia; 13 carriers times four indicia equals 52 indicia; 11 carriers times four indicia equals 44 indicia; and $60 \times 52 \times 44 = 137,280$.) Doubling the number of indicia available has increased the number of combinations eight times. This is an unsuspected property of the device of my invention, which is not apparent from the old desk calendar structure.

A wide variety of games may be played with the devices of my invention. As an illustration, the first pair of cells may be filled with carriers carrying indicia which are consonant letters of the alphabet; the second pair of cells may be filled with carriers whose indicia are vowels. The third pair of cells may be filled with carriers whose indicia are largely consonants. One game that may be played with this arrangement comprises inverting box 10 each time that a player is to play, thus exposing a new letter of the alphabet in each window 14 or 14' which faces the player. The player must then give a word which uses the exposed letters. A slightly harder game would require the player to form a word using the letters in the order displayed. A still harder game would require the words to be written on a crossword puzzle form to fill the spaces. The devices of FIGS. 7 and 8 may be used the same way as those of FIGS. 1–6, but if desired a player might be limited to the indicia in apertures 14 and his opponent to those in apertures 14'.

I claim:

1. A game-playing device comprising container means divided into a plurality of pairs of cells inseparably connected to be invertable only as a unit, horizontal divider means having sides and ends, said divider means separating each cell of a pair from the other cell of said pair, passage means connecting each cell of a said pair with the other cell of said pair at each side of said horizontal divider, a series of carrier means in each said pair of cells, said carrier means filling said pair of cells substantially completely with the exception of space for one additional carrier means and being adapted to pass through said passage means upon inversion of said container means, each said carrier means bearing indicia adapted to form sets of indica for playing a game, and means for viewing the indicia on said carriers in sets, said container being adapted for inversion to cause a carrier means to pass through a said

passage means and change the displayed indicia, said carrier means being arranged within each said cell to display indicia of said sets pseudo-randomly within each said cell and relative to at least one other pair of cells, the number of carrier means within each pair of cells in a given container means being different from the number of carrier means in said at least one other pair of cells in said container means.

2. The device of claim 1 in which said carrier means comprise rectangular plastic plates having opposed flat faces and a letter of the alphabet on each of said faces of each said plate.

3. The device of claim 1 in which said carrier means comprise cards having indicia on each side of said card.

4. The device of claim 1 in which there are at least three pairs of cells and in which the width of the horizontal divider means in each pair of cells is different from the width of the horizontal divider means in each other pair of cells, the horizontal divider means in each pair of cells being centered between parallel faces of the container to leave a space comprising said passage means at each side of said divider means, the width of the passage means being different in each pair of cells, said carrier means in each pair of cells having a thickness slightly less than the width of said passage means in that pair of cells for easy passage therethrough upon inversion of the container means.

5. A game-playing device comprising a plurality of sets of indicia carrier means, each said set comprising a different number of carrier means, and inseparable invertable container means for said carrier means provided with at least one display means for each said set adapted to display a single indicium on a said carrier, said container means being constructed to cause each carrier in each said set to shift position sequentially in said set upon invertable manipulation of said container, whereby to sequentially display the indicia of said sets in a very large array of sub-sets, said carrier means being arranged within each of said sets to display indicia of said sets pseudo-randomly within each said set and relative to at least one other of said sets, the number of carrier means within each sets in said container means being different from the number of carrier means in said at least one other set in said container means.

6. The device of claim 5 in which said container means includes a pair of cells for each said set of carrier means, said pairs of cells being interconnected for movement of a said carrier means from one cell of a pair to the other cell of a pair upon inversion of the container means, and in which each cell has a plurality of display means and each carrier bears separate indicia oriented for display by each display means.

7. A game-playing device comprising a single rectangular container having a pair of narrow end faces, a pair of narrow top and bottom faces, and a pair of broad side faces,

a plurality of parallel partitions extending between said top and bottom faces and extending from one side face to the other to divide said container into spearate volumes,

divider means spaced equally from said top and bottom faces and parallel thereto, and adapted to divide each said volume into a pair of cells, said divider means being spaced from said side faces to form passage means between each pair of cells along said side faces,

flat carrier means stacked parallel to said side faces in each cell, the number of carrier means in each pair of cells being one less than the number required to fill said pair of cells, said carrier means in any one pair of cells being of one thickness, at least one said pair of cells being provided with carrier means of a different thickness, said carrier means being provided with indicia, said indicia comprising members of a set of indicia and said carrier means being arranged pseudo-randomly with respect to said carried indicia within each cell and relative to at least one other pair of cells,

said container having openings constructed to display the indicia on a said carrier means adjacent said opening.

* * * * *