

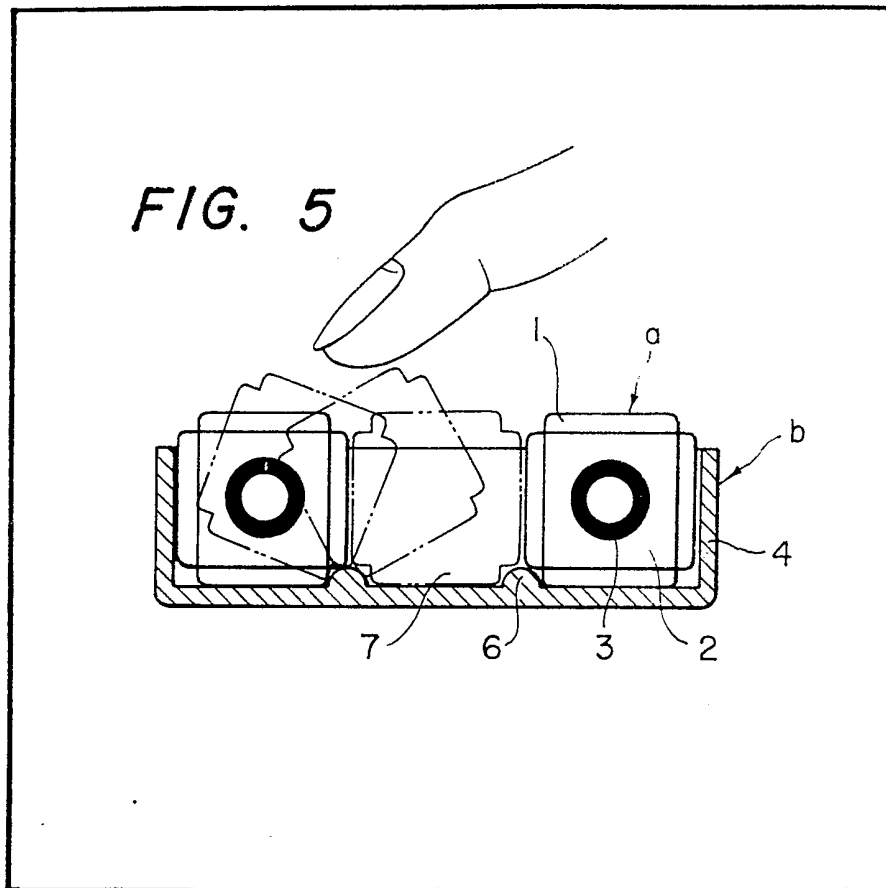
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(54) Block Puzzle

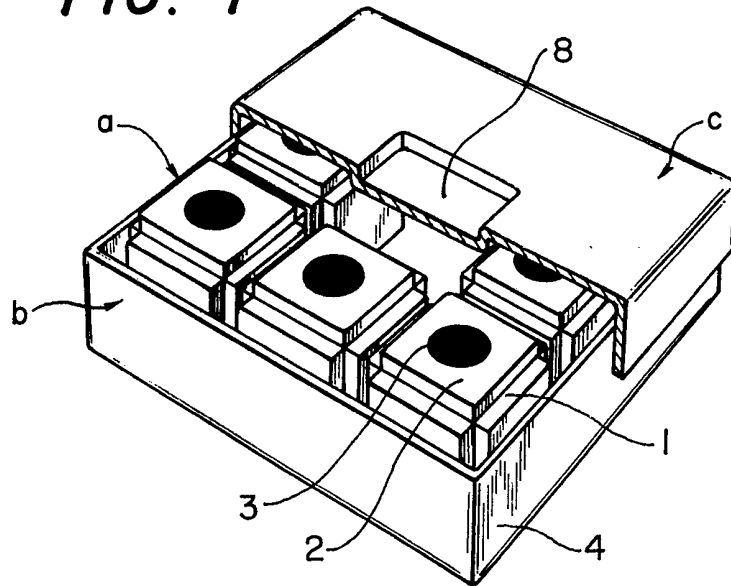
(57) Each block (a) has, on its faces, different patterns, the blocks being tipped over to form different

arrangements, in a box (b) having ribs (6) in engagement with truncated edges of the blocks. The box has a lid with a depression over a central void space to hold the pieces against disarrangement during carriage.

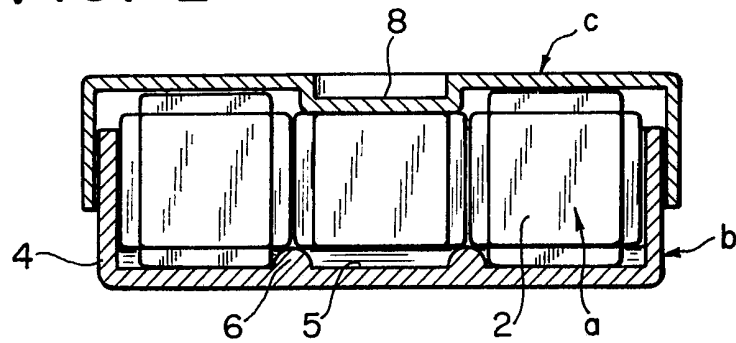


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**FIG. 1**



**FIG. 2**



**FIG. 3**

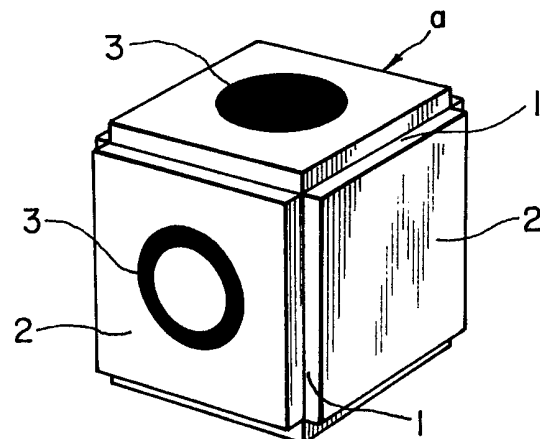


FIG. 4

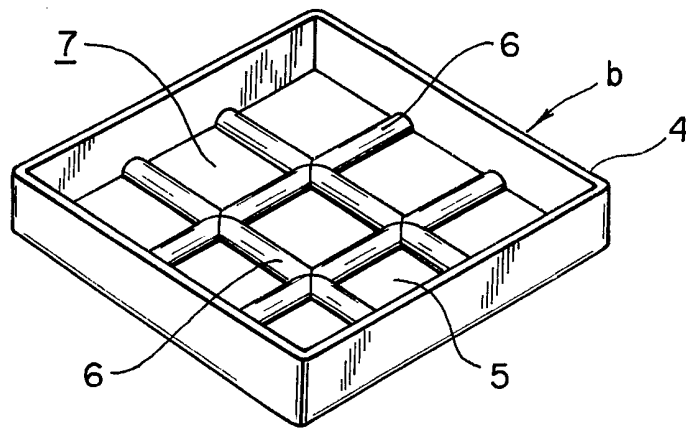


FIG. 5

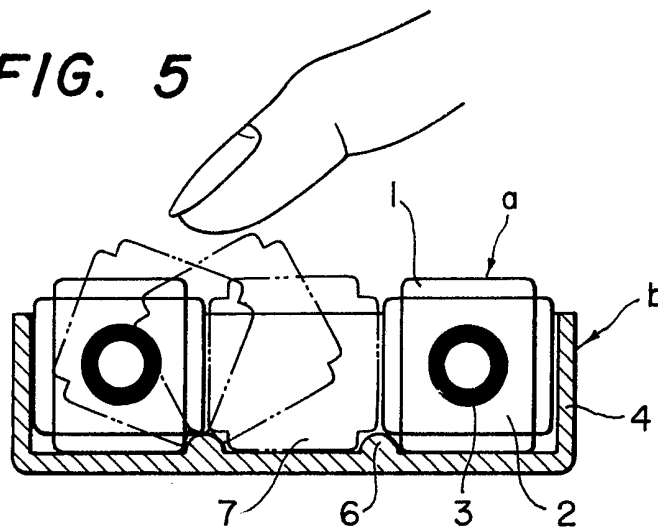


FIG. 6

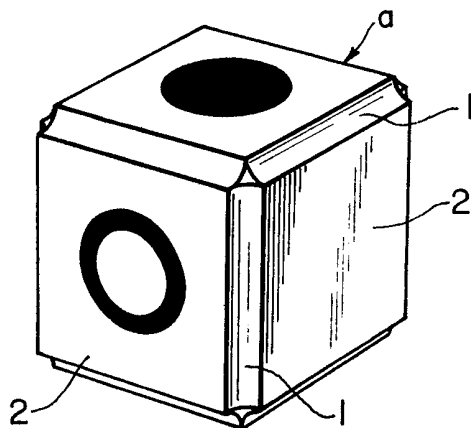
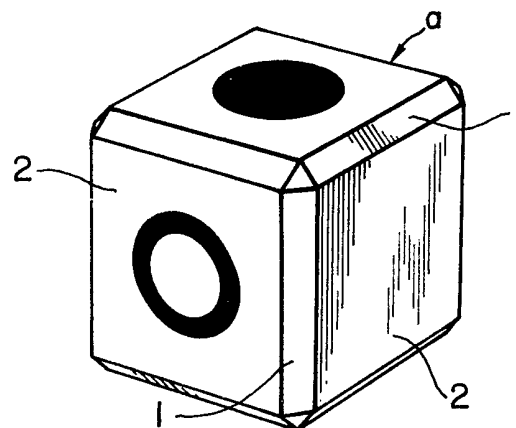


FIG. 7



## SPECIFICATION

### Puzzle Assembly

The present invention relates to a novel puzzle assembly.

- 5 A puzzle is already known, which comprises square pieces of flat plate arranged in a frame provided with a bottom, so as to leave a void space corresponding in size and shape to one piece. The frame is of a shape similar to that of  
10 each piece but of a size several times as large as the piece. The respective pieces are designed to be slidingly moved sequentially in the horizontal and longitudinal directions until a series of patterns or figures thereon are put in order.  
15 However, a puzzle of this type has the disadvantage that, once it has been worked out, its own particular fun or relish will be lost, because the solution of the puzzle is easily accomplished merely by horizontal and  
20 longitudinal movements of the pieces in one plane.

- It is therefore a principal object of the present invention to provide a novel puzzle assembly which is free from the above-mentioned  
25 disadvantage and is far more interesting and requires greater concentration to solve.

- According to the present invention, there is provided a puzzle assembly comprising a plurality of cubic pieces each having its edges truncated at  
30 a given angle to the adjacent faces and having applied to its faces different patterns, symbols and/or colours, and a box provided on its inner bottom surface with a plurality of ribs coffered to form a plurality of coffered panels, said ribs being  
35 in engagement with said truncated edges, and said pieces being set out in said coffered panels thus defined coffers with one said coffer being left empty.

- The pieces which are in the form of cubes (i.e. regular hexahedrons) are, in use, repeatedly  
40 moved in the horizontal and longitudinal directions while at each move rotating a piece through a 90-degree arc around the associated rib until the original overall pattern, symbol or  
45 colour is converted to a different pattern, symbol or colour.

The invention will now be further described with reference to the drawings, in which:—

- Figure 1 is a partially cut-away perspective  
50 view of a preferred embodiment of the present invention;

- Figure 2 is a longitudinal section taken along the line of cut of the lid portion of the arrangement of Figure 1, the cubes located along  
55 this line being shown in full for the sake of clarity;

Figure 3 is a perspective view of an individual piece of the embodiment of Figure 1;

Figure 4 is a perspective view of a box suitable for use in the embodiment of Figure 1;

- 60 Figure 5 is a similar view to that of Figure 2, to illustrate the operation of the puzzle assembly;

Figures 6 and 7 are perspective views showing two further forms of piece for use in a puzzle assembly according to the invention.

- 65 Referring now to Figures 1 to 5, a puzzle assembly comprises a plurality of pieces *a*, a box *b*, and an associated lid *c*, each of these elements being moulded integrally from a synthetic resin material. Each piece *a* is in the form of a regular  
70 hexahedron or cube, and has each edge 1 truncated at a given angle to the faces, preferably 90°, and each planar face 2 thereof having printed or otherwise applied thereto, a different pattern, symbol or colour. In the embodiment  
75 illustrated, each piece is in the form of a dice, at least some of the faces being printed or otherwise provided with a pip of different shape or colour. The box *b* is of square form and of a size large enough to receive three pieces in each horizontal  
80 or longitudinal line, the peripheral walls 4 of the box having a height slightly lower than that of each piece *a*. The box is provided on its inside bottom 5 with intersecting ribs 6 which form coffered panels 7 in the bottom of the box. Each  
85 rib 6 has an arcuate cross-section and a width equal to about twice that of the truncated edge 1. A piece *a* can be placed in any one of the coffered panels 7 with the truncated edges 1 coming into contact with the associated ribs 6. In assembling  
90 the puzzle, a total of eight pieces *a* are set out in the box *b* with a space corresponding to one coffered panel 7 being left at the centre, as illustrated in Figure 1.

- The box is then covered with the lid *c*. The lid *c*  
95 is provided at its centre with a depressed portion 8 of square shape and of a size corresponding to one coffered panel 7, so that there is no possibility that the pieces *a* when set out in the box could be disarranged during carrying.

- 100 The operation of the puzzle according to the present invention will now be described. Upon removal of the lid *c*, any one of pieces *a* adjacent to the empty central coffered panel 7 is rotatively shifted into this central panel, as shown in Figure  
105 5. In the embodiment illustrated, a piece *a* positioned on the left side of the central coffer 7 is being rotated through 90° around a rib 6 which is in engagement with the truncated edge 1 of the piece, so that another coffered panel 7 will be left  
110 empty at the original position of the piece moved. Another piece *a* positioned after or before the new empty coffered panel 7 is rotated through 90° into this empty panel. These procedures are repeated until a required overall pattern, symbol  
115 or colour comes into view.

While a total of eight pieces are used in the embodiment described, it will be understood that a lesser or greater number of pieces may be employed, if desired.

- 120 In the embodiment described above, the edges of a piece have been described as being truncated at right angles to the faces. As seen in Figures 6 and 7, however, the edges of a piece may be truncated to produce an arcuate form or at a  
125 given angle other than 90° with respect to each plane of the piece. The ribs formed on the inner bottom surface of the box are given a corresponding arcuate cross-section. In the present invention, it is essential that the

respective ribs should hold an associated piece in place and provide an axis around which an associated piece can turn through 90°.

- Each piece may be printed with or otherwise
- 5 have applied to its planar faces, different patterns, symbols or colours, or these may be directly applied onto its faces using separate printed sheets. Alternatively, the six faces of each piece may form six areas coloured differently.
- 10 It will be understood that many modifications or changes may be made without departing from the scope and spirit of the present invention as defined in the appended Claims.

#### Claims

- 15 1. A puzzle assembly comprising a plurality of cubic pieces each having its edges truncated at a given angle to the adjacent faces and having applied to its faces different patterns, symbols and/or colours, and a box provided on its inner
- 20 bottom surface with a plurality of ribs coffered to form a plurality of coffered panels, said ribs being in engagement with said truncated edges, and

said pieces being set out in said coffered panels thus defined coffers with one said coffer being left

25 empty.

2. A puzzle assembly as claimed in Claim 1, wherein the edges of said piece are truncated at right angles to the adjacent faces.
3. A puzzle assembly as claimed in Claim 1 or
- 30 Claim 2, wherein each rib has an arcuate cross-section.
4. A puzzle assembly as claimed in any one of Claims 1 to 3, wherein each rib has a width equal to about twice that of the truncated edge of a
- 35 piece.
5. A puzzle assembly as claimed in any one of the preceding Claims, further comprising a lid designed to fit over said box, said lid having at its centre a depressed area corresponding in shape
- 40 and size to one said piece.
6. A puzzle assembly substantially as hereinbefore described with reference to and as shown in Figures 1 to 5, or Figure 6, or Figure 7, of the drawings.