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54 **A toy made up of polyhedral pieces.**

57 **A toy made up of a plurality of polyhedral pieces (AX, AY, AZ, BX, BZ, CX, CY, CZ) assembled to form three different prisms having the same volume but different dimensions.**

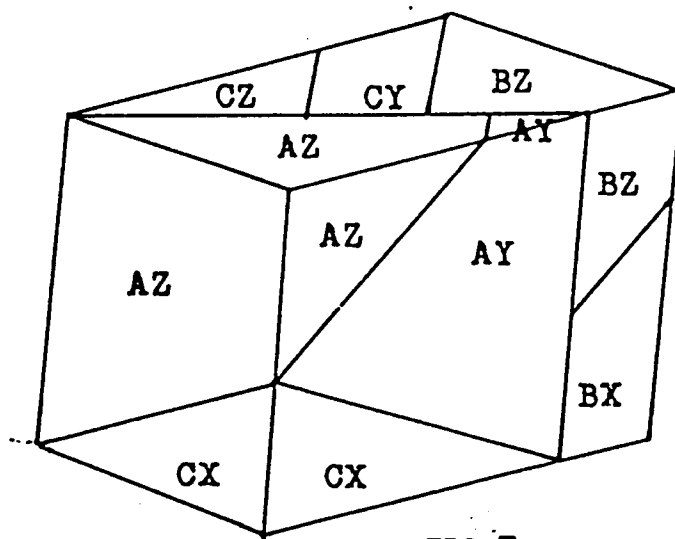


FIG. 7.

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The present invention relates to a toy.

More particularly, the present invention relates to a toy made up of a plurality of polyhedral pieces.

Many types of toys are known consisting of a plurality of polyhedral pieces which can be assembled together to form different figures or representations. These known types of toys allow to express the imagination and the artistic ability of a person.

The object of the present invention is to provide a toy for testing and improving the logical ability of a person.

According to the present invention this object is achieved by a toy consisting of eight polyhedral solid pieces, each having different dimensions and shapes, which, when properly assembled together, form three different prisms having the same volume.

The polyhedral solid pieces of the present invention may be coloured and have the same colour or different colours from each other, such as, i.e. blue, black, brown, green, orange, white, red, yellow, etc.

The polyhedral solid pieces may be made of any durable material and a plastic material is preferred. Examples of plastic materials to be used for manufacturing the polyhedral solid pieces are: polystyrene, ABS, polyvinylchloride, polyethylene, polypropylene, mixtures thereof and alike.

The different prismatic boxes may have the same dimensions or different dimensions from each other.

In order to keep the polyhedral solid pieces easily assembled together, the toy of the present invention may comprise four transparent boxes of different dimensions. Only three of these boxes may be completely filled with the eight polyhedral pieces.

The task given to a person is to find to add boxes by trying to put all the eight pieces together in each one of the remaining three boxes.

By assembling the eight polyhedral solid pieces three different prisms are obtained having different dimensions but the same volume. The prisms may be assembled in the transparent boxes supplied with the solid pieces.

The toy of the present invention offers many advantages. It allows to test the wits and the ability of a person by assembling the polyhedral pieces into three prisms with different dimensions at a time.

The above and other features of the present invention may be better understood from the following detailed description with reference to the specific exemplary embodiments taken with the accompanying drawings, in which:

- Each of Figures 1, 2 and 3 is the prospective view of one of the three different prisms having the same volume made up of the eight polyhedral pieces;
- Figure 4 is a frontal view of a parallelogram prism having the vertices P, R, S, T;
- Figure 5 is a frontal view of a parallelogram different from the one of Figure 4, but having the same volume and made up of three pieces: two triangle based prisms X and Z and a rectangular based prism Y, obtained by cutting the parallelogram of Figure 4 with planes passing through lines LR and PK, wherein point L is taken on side TS and point K on the line joining point L with vertex R;
- Each of Figures 6(a) and 6(b) is the prospective view of two different prisms obtained from the three pieces X, Y and Z of Figure 5;
- Figure 7 is the prospective view of a parallelogram prism made up of eight pieces obtained by cutting the parallelogram of Figure 6(b) with a plane passing through the broken line dividing this parallelogram in triangular pieces A and C and a rectangular piece B.
- Figure 8 is the prospective view of the eight solid pieces obtained by splitting the parallelogram prism of Figure 7.

Figures 1 to 3 illustrate a first, second and third prism respectively, having the same volume and made up of eight polyhedral pieces. Each piece is marked with a letter which is AX, AY, AZ, BX, BZ, CX, CY and CZ.

By dividing the top of the parallelogram prism of Figure 6(b) into triangular pieces A and C and a rectangular piece B by a broken line and by cutting through this broken line, eight polyhedral solid pieces are obtained.

The names of the pieces, the number and names of the faces of these eight polyhedral pieces of different shapes and dimensions and the possible colours are listed in the following Table 1.

TABLE 1

Name of piece	Colour	Number of faces	Name of faces
AX	BLUE	5	AX1 AX2 AX3 AX4 AX5
AY	BLACK	5	AY1 AY2 AY3 AY4 AY5
AZ	BROWN	5	AZ1 AZ2 AZ3 AZ4 AZ5
BX	GREEN	5	BX1 BX2 BX3 BX4 BX5
BZ	ORANGE	6	BZ1 BZ2 BZ3 BZ4 BZ5 BZ6
CX	WHITE	6	CX1 CX2 CX3 CX4 CX5 CX6
CY	RED	6	CY1 CY2 CY3 CY4 CY5 CY6
CZ	YELLOW	4	CZ1 CZ2 CZ3 CZ4

By assembling the above eight polyhedral pieces, the three different prisms illustrated in Figures 1 to 3 may be obtained. The details of these three prisms are listed in the following Table 2.

TABLE 2

Prism Fig.	Front face	Top face	Right face
1	AX1CZ1BZ1BX1CY1	CY2AY2BX2AX2CX2	CX3AX3
2	CY1AX1BX1BZ1CZ1	CZ3BZ3AZ3AY3CY3	CY6
3	CX4AZ4	CZ3CY3BZ3AY3AZ3	AZ5AY5BZ5BX5CX5

The toy can be provided with four prismatic boxes of the same volume but different dimensions, made of transparent plastic material. One face of each box is left open for assembling the pieces into it. The eight pieces completely fill three of these boxes at a time. One of them cannot be filled with all these pieces.

Claims

1. A toy consisting of a plurality of polyhedral solid pieces, characterised in that the polyhedral solid pieces are eight, have different dimensions and shapes and properly assembled together form three different prisms having the same volume.
2. The toy according to claim 1, characterised in that the different prismatic boxes have the same volume but different dimensions.
3. The toy according to claims 1 or 2, characterised in that the solid pieces have different colours.
4. The toy according to any of the preceding claims, characterised in that the solid pieces are made of a durable material.
5. The toy according to claim 5, characterised in that the durable material is a plastic material.
6. The toy according to any one of the preceding claims, characterised in that it further comprises four transparent boxes of the same volume but different dimensions, having one face open; only three of these boxes are completely filled by the eight solid pieces.

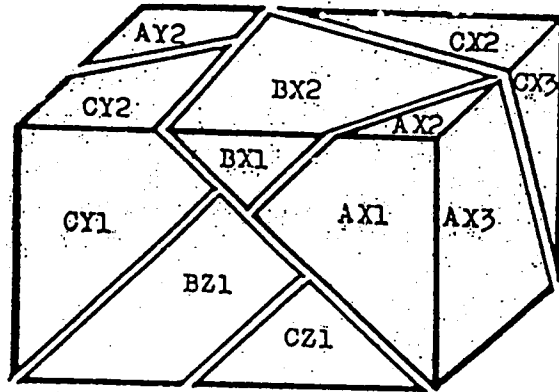


FIG. 1

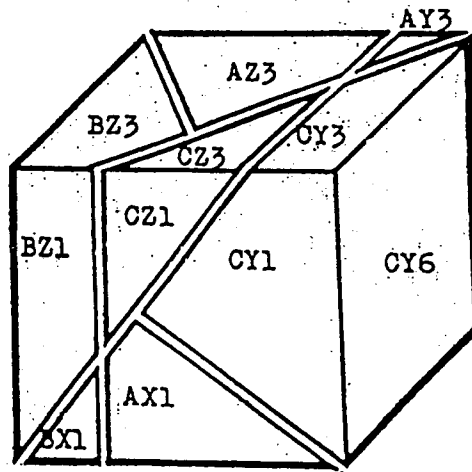


FIG. 2

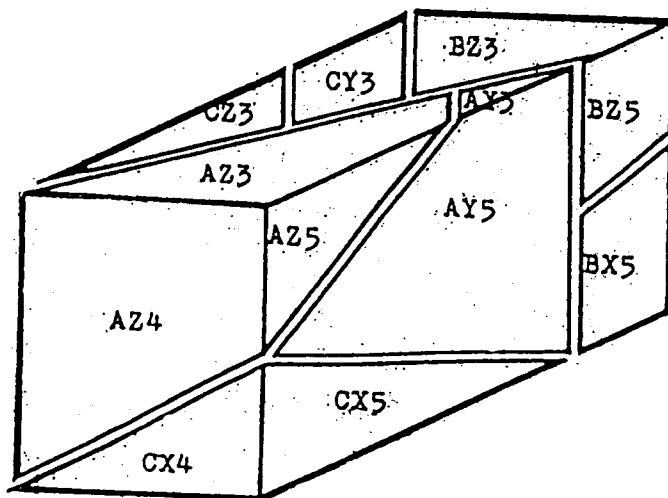


FIG. 3

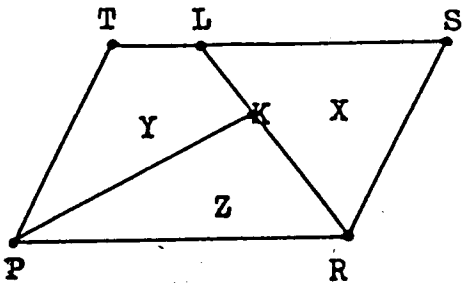


FIG. 4.

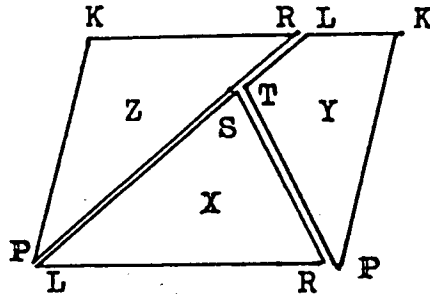


FIG. 5.

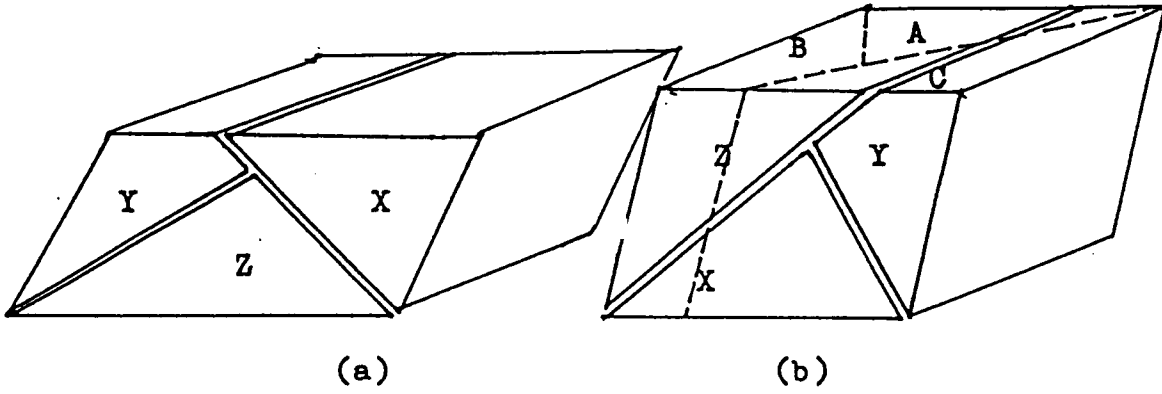


FIG. 6.

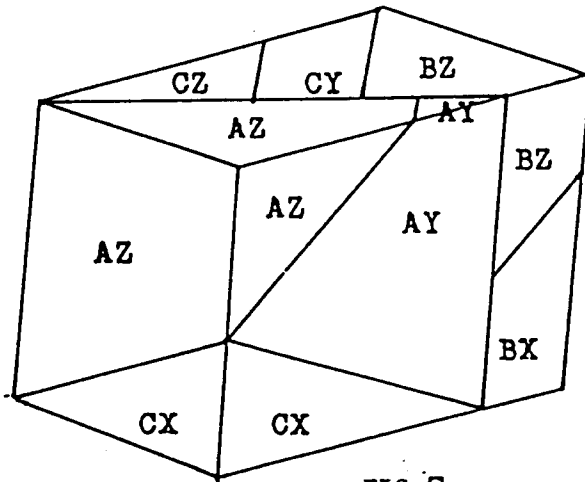


FIG. 7.

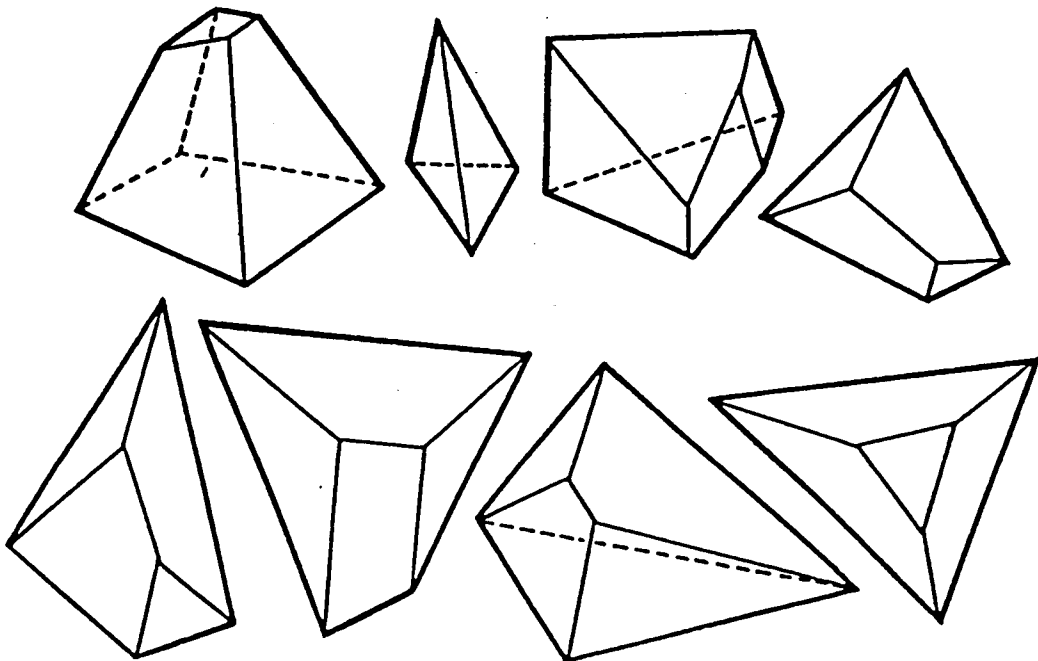


FIG. 8



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EUROPEAN SEARCH REPORT

Application Number

EP 92 10 5790

DOCUMENTS CONSIDERED TO BE RELEVANT		
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim
Y	US-A-1 471 943 (CHAMBERS) * page 1, line 102 - page 2, line 10 * ---	1-6
Y	FR-A-2 536 292 (NAGORNY) * claim 1 * ---	1-6
A	FR-A-2 245 164 (CHEMLA) ---	
A	US-A-3 645 535 (RANDOLPH) -----	
The present search report has been drawn up for all claims		
Place of search	Date of completion of the search	Examiner
THE HAGUE	30 JUNE 1992	GLAS J.
<p>CLASSIFICATION OF THE APPLICATION (Int. Cl.5)</p> <p>A63F9/12</p> <p>TECHNICAL FIELDS SEARCHED (Int. Cl.5)</p> <p>A63F</p>		
<p>CATEGORY OF CITED DOCUMENTS</p> <p>X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document</p> <p>T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document</p>		