

March 4, 1958

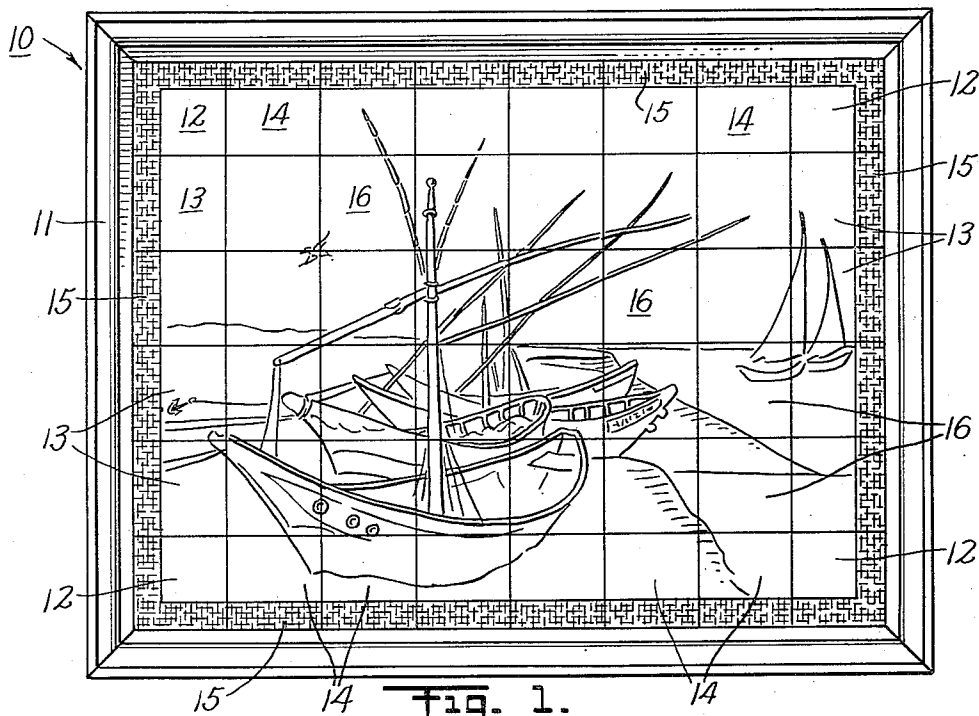
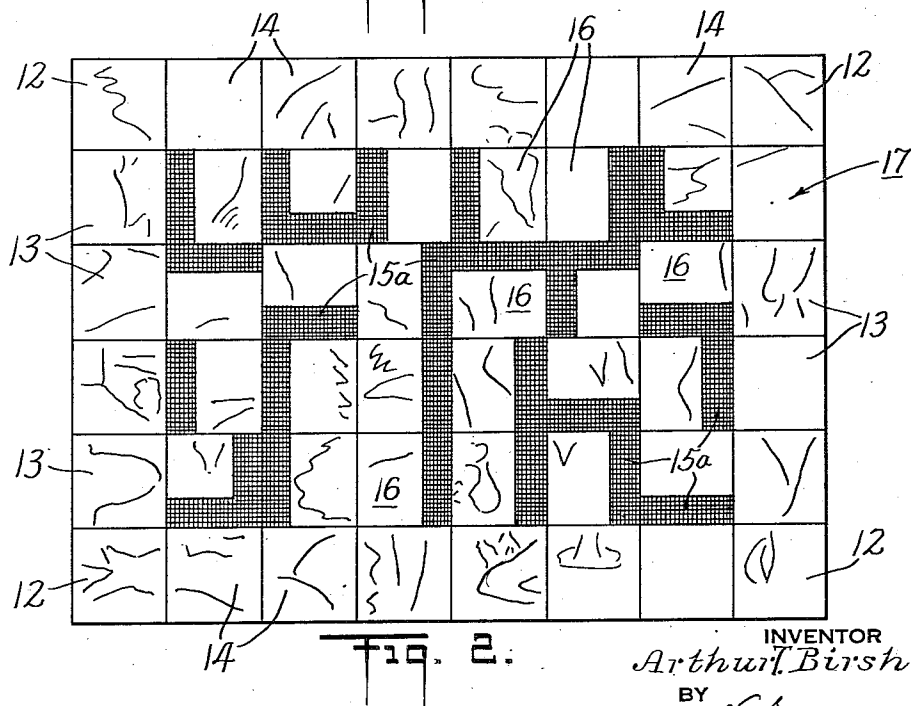
A. T. BIRSH

2,825,568

PICTURE PUZZLE

Filed Nov. 22, 1954

2 Sheets-Sheet 1



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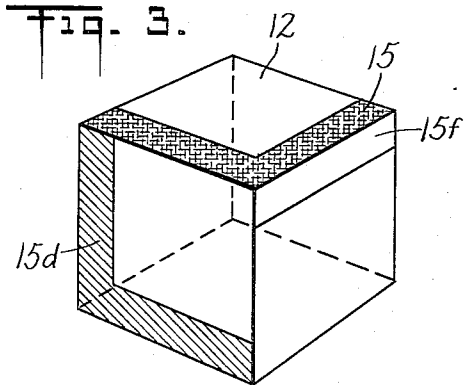
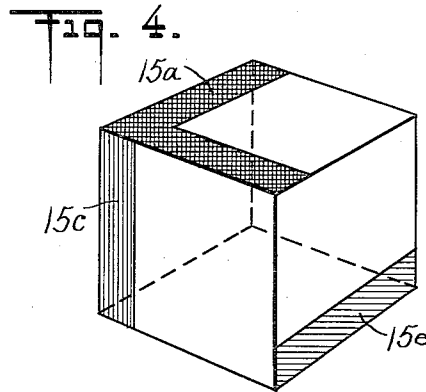
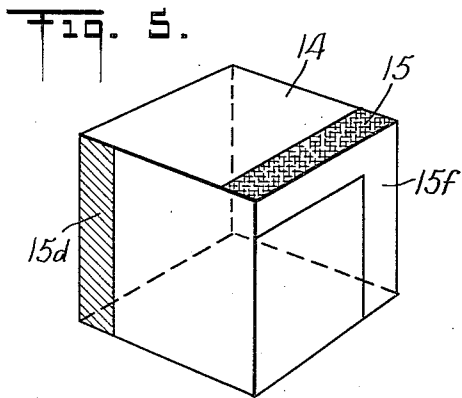
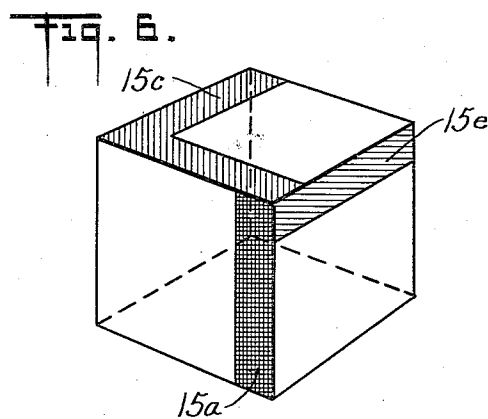
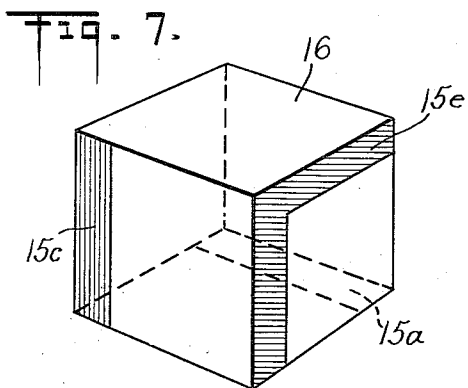
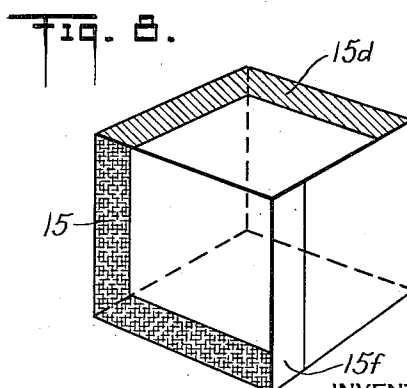
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PICTURE PUZZLE

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1 Claim. (Cl. 273—157)

This invention relates to a puzzle; more particularly to a picture puzzle made from a plurality of segments which, when assembled, form a graphic representation or picture.

Known to me is the provision of blocks or polyhedrons of many sides, specifically a six-sided polyhedron or cube, each side carrying a segment or fragment of a graphic representation which, when spatially positioned in space filling assembly, outline a unitary picture very much the same as employed in making jig saw puzzles.

Contrasted with jig saw puzzles, the utilization of a plurality of faces of the polyhedron is confusing and leads to a permutation and combination of picture possibilities which is so great as to be discouraging by reason of the rectilinear matching sides employed which give no clue to the matching picture parts.

Accordingly, the use of polyhedral elements, specifically six-sided polyhedrons, such as cubes, each of the sides of which carries a fragmental portion of a design or picture, has not met with great favor by reason of the complexity of the possibilities in endeavoring to rearrange the puzzle parts.

The use of pictures having the same color motif in a puzzle assembly with multi-faced polyhedrons each carrying a portion of a puzzle places a limitation on what type of picture may be employed as there is difficulty in ascertaining the polyhedral faces common to one picture for solving a puzzle from a pre-determined number of parts, such as cubes, to render such puzzles practically insoluble.

Accordingly, it is an object of my invention to provide in a picture puzzle consisting of a multiplicity of polyhedral units, an arrangement of an assembly whereby the faces of the units carrying portions of a picture which are related to each other, may be predeterminedly exposed to view so as immediately to turn, exposed to view, related fragments, with unrelated fragments of the same pictorial representation turned away, thus to simplify the arrangement for the solution of the puzzle while not giving the clue to matching of the puzzle parts.

Still more particularly, it is an object of the invention to provide a puzzle having a relatively simple number of puzzle elements or units which may be used to provide a plurality of puzzle pictures with the minimum confusion between the faces of puzzle elements not related to each other and to include matching rectilinear lines whereby a shadow box or frame may be employed to hold the related picture parts together and provide an assembly forming a desirable picture, making it possible to reorganize the other of the polyhedral surfaces into exposed surfaces having related picture parts, to form at least six different distinctive pictures, where polyhedrons of six faces are employed.

Still more particularly, this invention seeks to avoid the disadvantages of complexity and the tedium and confusion involved in arranging pictorial segments of a plurality of polyhedrons, all carrying out as an object of my invention, the provision of a simple coding arrangement

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for picture puzzles made of a plurality of polyhedral units.

The invention, in its more specific embodiment, resides in the provision of a puzzle formed of polyhedrons, the faces of each piece of which assembly carries a fragment of a different puzzle, whereby one or more pairs of opposed surfaces of said units carrying thereon a segment or fragmentary portion of a graphic representation or picture, may permit the simplification of arrangement of the exposed faces of related pictures, thereby to simplify the arrangement of related segments for the solution of the puzzle.

Still further, it is an object of my invention to provide a picture puzzle in which polyhedron surfaces have a fragment of a different picture and a coding indicium whereby related unit surfaces may be predeterminedly arranged and exposed to view, more specifically employing the coding indicium to form an attractive border for the representation or picture.

Still more particularly, it is an object of this invention to provide a picture puzzle in which each face of six sided polyhedrons, such as cubes, carries a fragment of a picture and by providing forty eight cubes, six different picture puzzles are available for solution, the probabilities of assembly being simplified and the outer edge of the picture being made more attractive by including a coding indicium on the border pieces on the exposed faces and correlating associated indicia on the opposed faces of the inner opposed faces of the inner cubes, whereby faces common to a single picture puzzle may be exposed for carrying out the preliminary step of puzzle solving.

To attain these objects and such further objects as may appear herein or be hereinafter pointed out, I make reference to the accompanying drawing, forming a part hereof, in which—

Figure 1 is a plan view of a picture puzzle assembly in a retaining frame.

Figure 2 is a plan view of the reverse face of the puzzle illustrated in Figure 1;

Figures 3 to 8 are magnified perspective views of different block elements.

Making reference to the drawing, there is illustrated a picture puzzle assembly 10 consisting of forty eight cube elements retained within an enclosing frame or shadow box 11. The object of the puzzle may be appreciated by reference to the puzzle assembly 10, Figure 1 which is exposed to view. In this assembly, there are four corner border cubes 12, eight edge border cubes 13, and twelve border side cubes 14, totalling twenty four border cubes or units relates to each other, carrying indicia 15 identifying a border piece. In the present assembly, each indicium 15 is preferably colored. The color scheme for the exposed picture assembly as illustrated is the color yellow, which for purposes of this application may be referred to as a coding indicium.

In the picture assembly illustrated, it will be seen that there are twenty four inner faces 16, which are uncoded and carry no indicium but merely a fragment of the picture. In reversing the complete assembly 10 shown in Figure 1 to view the reverse face 17 of the assembly, each of the cube elements shows that the opposed faces comprise uncoded faces on the border pieces 12, 13 and 14, including a fragment of another picture puzzle, whereas the inner cubes 16 carry on their faces reverse from the picture in Figure 1, a fragment of another picture and an indicium 15a which is of a predetermined, correlated or companion color, which in the example illustrated, constitutes the color black.

Extending the consideration of the display on each of the cubes for purposes of illustrating my invention in connection with cubes, where six different picture puzzles may be assembled, it will be apparent that of the forty

eight cubes, each cube may carry on one face thereof one forty-eighth fragment of a complete picture puzzle assembly, with each cube having three faces thereof with three different coding indicia and three uncoded faces opposite thereto.

To arrange a puzzle for the solution of one related picture assembly, it is contemplated by me to provide a series of companion coding colors. For example, for picture puzzle assembly #2, twenty four border pieces may be arranged to carry the red stripe or red coding indicia 15c thereon, and be arranged to expose these faces upwardly. The twenty four related inner cubes carry a companion color on the diametrically opposed faces and are, on the unexposed, downwardly directed faces, provided with a green stripe as the coding indicia 15d.

Picture puzzle #3 may have a series of twenty four border units, with green stripe indicia 15d up and twenty four inner pieces, diametrically opposite, with red stripe indicia 15c down.

Puzzle #4 has the border pieces with blue indicia stripe 15e facing upwardly and the twenty four inner cubes with the white stripe down.

Puzzle #5 has twenty four border pieces, each with a white indicium stripe 15f, and twenty four inner cubes, each with a blue indicium stripe 15e facing down.

Puzzle #6 has twenty four border pieces, each with a black indicium stripe 15a up, and twenty four inner cubes, each with a yellow indicium stripe 15 facing down.

It will be understood that by this arrangement, the puzzle pieces, when they are scattered or disassembled, are first arranged with relation to two opposed companion colors or indicia. For Puzzle #1, all pieces are chosen to show the twenty four faces carrying the yellow stripe 15 up (parallel to surface of the table), and turning the other twenty four remaining cubes so that the black stripe 15a carried by these other component pieces is turned down. The puzzle may then be solved by arranging all of the cubes faced up to position the border indicia in the rectilinear arrangement. The other pieces, which are uncoded, may then be rearranged in accordance with their correct relation to the pictorial representation.

Six different pictorial representations may then be provided by the puzzle pieces formed as cubes as follows:

Picture Puzzle	24 Border Pieces Faced Up	Indicium	24 Inner Pieces Faced Down	Indicium
#1.....	yellow.....	15.....	black.....	15a.....
#2.....	red.....	15c.....	green.....	15d.....
#3.....	green.....	15d.....	red.....	15c.....
#4.....	blue.....	15e.....	white.....	15f.....
#5.....	white.....	15f.....	blue.....	15e.....
#6.....	black.....	15a.....	yellow.....	15.....

It will be understood, however, that while I have illustrated puzzle pieces involving cubes, forty eight faces of the total of which comprise segmented portions of a single graphic representation, I may provide other polyhedral units. For example, further simplification may be made by having puzzle pictures on only two faces of related polyhedral units, with the same arrangement, with the entity as border units, each carrying a coding indicium on the exposed face, with inner pieces uncoded, and the

reverse face having the inner pieces which are uncoded on the exposed face, carrying an indicium which coordinates with the reverse face of the border pieces to form a different pictorial assembly.

Likewise the polyhedrons may be oblongs such as found in the preparation of domino pieces.

In each of the puzzle pictures, the fragments or segments are so related that there are an equal number of border pieces to the inner pieces.

The puzzle which I have provided makes it possible to choose pictorial representations of monochromatic design or polychromatic design of the same related colors, without confusingly complicating the solution of the puzzle.

In the final assembly, the employment of stripes as the indicia on each related piece, serves to provide a highly ornamental assembly, cooperating with the frame element or shadow box to serve as a wall hanging. It is understood, however, that the terms "coding indicia" or "coding indicium" as employed in the claim, are used broadly and other forms of indicia than stripes may be employed and come within the spirit of the present invention.

Having thus described my invention and illustrated its use, what I claim as new and desire to secure by Letters Patent, is:

A puzzle capable of being arranged to form a plurality of polygonally shaped graphic representations, each of said representations being segmented and a segment being carried upon a surface of polyhedral units which total, in contiguous space filling assembled position, the polygonal entity of said graphic representation, each of said graphic representations being segmentally carried on diametrically opposed faces of said polyhedral units, any representation being carried by the said units when arranged in assembled relation to form said polygon having the border pieces equal in number to the inner pieces, the border pieces of any assembled graphic representation carrying, in addition to a fragment of the representation, a coding indicium, means arranged to form with other border pieces a border and the inner pieces in the same assembled representation carrying a fragment of the representation being uncoded, with a diametrically opposed face to the uncoded face carrying a border indicium outlining means coordinated to said first indicium, the exposure of the reverse, opposed faces of said polyhedral units disclosing uncoded faces on the reverse face of the indicium coded-border units which, when reassembled, cooperate with the coded reverse faces of the inner units to provide the said other graphic representation, in which other representation the former inner units become border units, said units constituting cubes, forty-eight in number, and the rectangularly outlined picture is segmented to provide eight rows having six columns of each of said cubes and each cube carrying three border outlining indicium means on three faces thereof.

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