May 12, 1959 H. M. LONG 2,886,325

THREE-DIMENSIONAL CROSSWORD PUZZLE

Filed May 3, 1955

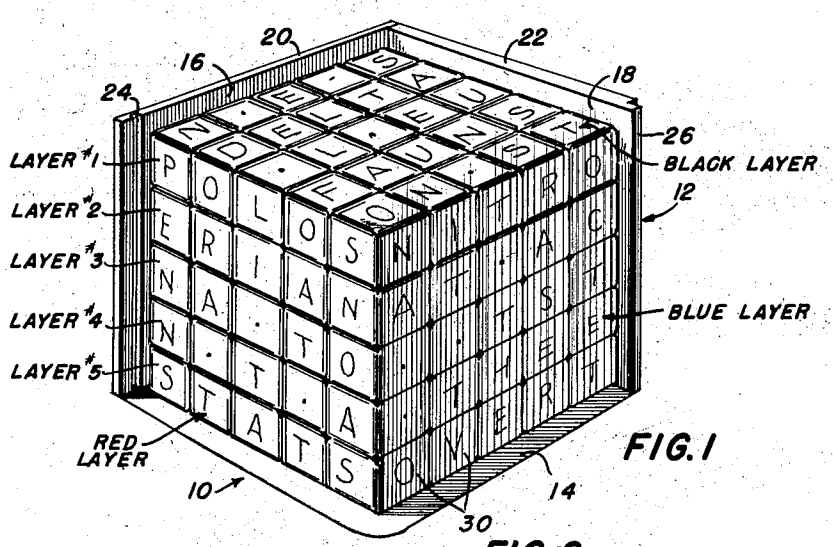
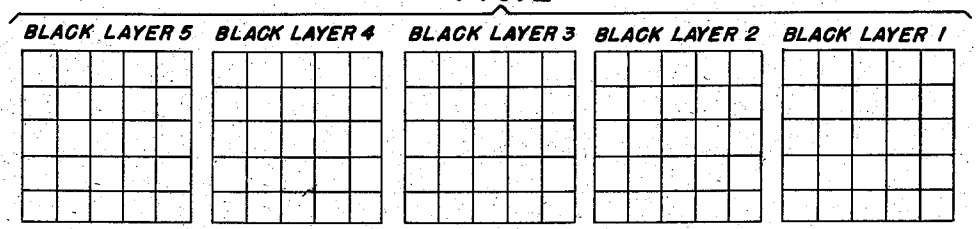


FIG. 1

FIG. 2



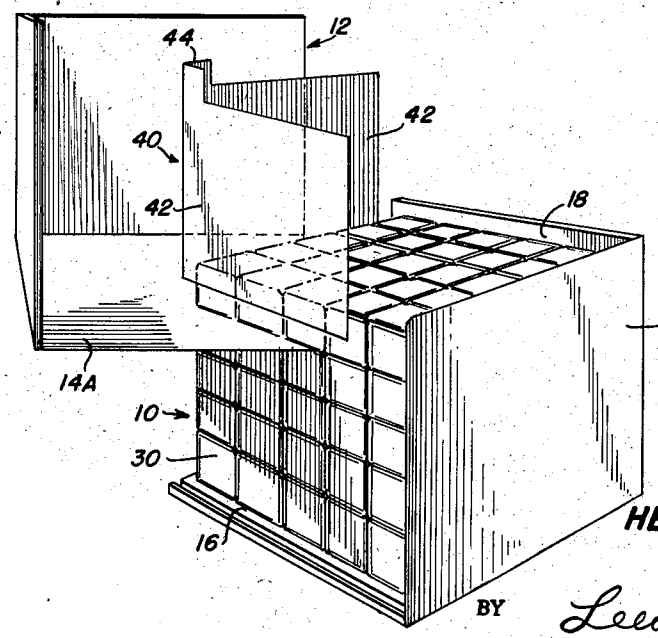


FIG. 3

INVENTOR
HENRY M. LONG

BY Leech and Radue
ATTORNEYS

United States Patent Office

2,886,325

Patented May 12, 1959

2,886,325

THREE-DIMENSIONAL CROSSWORD PUZZLE

Henry M. Long, Lancaster, Pa.

Application May 3, 1955, Serial No. 505,573

7 Claims. (Cl. 273—157)

This invention relates to a crossword puzzle and more particularly to a three-dimensional crossword puzzle.

One of the objects of this invention is to provide a cross-word puzzle having a three-dimensional solution.

Another object of this invention is to provide a three-dimensional crossword puzzle made up of blocks having characters thereon.

Yet another object of this invention is to provide a three-dimensional crossword puzzle made up of blocks wherein the faces of each block are designated in a specific order, so that the blocks may be arranged in layers according to designations to aid in the solution of the puzzle.

A still further object is to provide a three-dimensional crossword puzzle comprising, in its preferred form, 125 cubical blocks having a letter or mark designating a blank on each face thereof and adapted to be arranged in an assemblage in the form of a cube consisting of five layers of blocks, each layer having 25 blocks arranged in the form of a square, each layer constituting an independent puzzle.

Another object of this invention is to provide a three-dimensional crossword puzzle in the form of a cube composed of five layers of twenty-five blocks arranged in a square, this cube being carried within a box so constructed that regardless of which of its sides the box rests upon, it may be separated without disturbing the cube of blocks, into two racks each comprising three sides of the box.

These and other objects and advantages will become more apparent from the following detailed description and accompanying drawing, wherein:

Fig. 1 is a perspective view of a set of cubical blocks assembled in a portion of the encasing box;

Fig. 2 is a plan view of all of the 125 blocks which constitute the puzzle, laid out in squares of 25 blocks each; and

Fig. 3 is a perspective view of the assembled blocks carried in one piece of the two piece box and showing the manner in which the layers may be removed with facility from the assemblage for further solution of the puzzle.

This three-dimensional crossword puzzle is in its preferred embodiment made up of 125 cubical blocks of equal size which are assembled in five square layers of 25 blocks each thus forming a cube, each layer side constituting a separate crossword puzzle having an independent solution. On each face of every block is inscribed a character, either one of the letters of the alphabet, a numeral, or a mark designating a blank. In addition to the characters, the faces of every block are colored, the relative color positions being the same on each block. The assemblage or cube of 125 blocks is encased in a box which is made up of two sections called racks, each constituting three sides of the box. Such a box makes it possible to expose any given portion of the assemblage by removing one of the racks after manipulation of the box without disturbing the blocks.

The object of the game is to place each of the blocks in such a position that at one instant there is contained within the cube of 125 blocks solutions for thirty crossword puzzles. These thirty solutions are arrived at by completing thirty puzzles which are denoted by color and layer, there being five puzzles for each color and six colors.

As shown in Fig. 1 the assemblage or cube of blocks **10** is carried on a half box or rack **12**. This rack comprises a bottom **14** with two side walls **16** and **18** extending vertically upward from two adjacent edges of the bottom. All of the sides of the side walls **16**, **18** and the bottom **14** are approximately the same length so as to produce a cube when two racks are assembled. The top edge surfaces **20** and **22** of side walls **16** and **18** respectively are smooth while the free vertical end portion of side wall **16** has a vertical groove or channel **24** parallel to its vertical edge. The free vertical edge portion of side wall **18** has a protrusion or tongue **26**. Two of these racks **12** are combined to form a box for encasing and carrying the assemblage **10** and also for use in manipulating the layers of blocks when solving the puzzle. As will be readily apparent, the grooved edge of one rack **12** receives the tongue portion of the other rack while one bottom member **14** will rest on the smooth or flush top surfaces of the side wall members. The bottoms of the racks are made of relatively thin metal because there is a need for this as will be later explained. The side walls may be of wood of a suitable thickness.

Each face of each block **30** is inscribed with a letter of the alphabet or a mark designating a blank. The six faces of each block are colored, for example, black, red, blue, green, orange, and brown, the relative color positions being the same on each block. The edges of each block are beveled, rounded or otherwise broken as indicated in Figures 1 and 3.

As shown in Fig. 3, the bottoms **14** or **14A** of the racks **12** are used as "slicer members." By this it is meant that the bottom **14A** may be slid in between adjacent layers of blocks so that the layers may be removed from the assemblage and placed on a smooth surface as indicated in Fig. 2 for the solution of the independent puzzles.

Since the 125 blocks are formed in a cube which is five square layers of 25 blocks, each, it is obvious that there are 30 independent puzzles to be solved. The puzzles are denoted by the color of the face and the layer number, for example—"Black layer 1" etc., see Fig. 2. There are five puzzles for each color. In this connection it should be noted that the blocks may be used without color designations. Of course, this produces a very complicated game.

In solving the puzzle from 30 sets of crossword definitions supplied with the puzzle, the 125 blocks are placed upon a smooth surface and the blocks so turned that the upper exposed faces of the blocks are of the same color, preferably the black, for starting. With the black surfaces exposed on top, the blue surfaces should face the solver, the green faces would be to his right, the red faces to his left, the brown faces on the bottom, and the orange faces to the rear, see Fig. 1. The sequence in which the various color layers are solved is of no consequence. However, the layers must be solved in accordance with the puzzle number, i.e., Black-layer 1, Black-layer 2, etc. In assembling the layers to form an assemblage they must be placed one on the other in order of the layer number.

In replacing the layers of blocks on the rack it is sometimes difficult to remove the "slicer" without disturbing the blocks positioned beneath the "slicer" and possibly those resting on the slicer. In order to obviate this difficulty, there is provided an angular holder **40**. As shown

in Fig. 3 this holder comprises two walls 42—42 connected at right angles to each other with a gripping tab 44 extending upwardly from one end of the intersection of the two walls 42—42. In use, the holder is held by the tab 44 and the two walls placed against the exposed vertical faces of the blocks in a layer and the "slicer" then gently slid out from under the blocks.

With the 125 blocks on a surface and the black faces up, start to solve by working out puzzle denoted "Black Layer 5," the fifth layer always being racked up first to form the bottom of the assemblage. In solving the puzzle, merely select the letters and dots (blanks) that when properly arranged produce what appears to be an answer to the proper puzzle definitions. After Layer 5 is finished proceed with the solution of Black-layer 4, then Black-layer 3, etc., until all of the Black-layer puzzles have been solved as shown in Fig. 2 of the drawing. After this the layers are stacked on the rack bottom 14 with the bottom layer being #5 and upward in order to #1. If the puzzles cannot be solved, place the extra blocks, oriented properly with respect to face color, into the places left unfilled and stack as indicated previously.

After this, place the second rack member over the assemblage 10 to form the box, turn the box 90° in any direction and remove the rack member which is free, thus exposing a layer having a new color facing upward. As previously described, the layers are removed from the assemblage by sliding the rack bottom between adjacent layers, removing the layer and placing it on a smooth surface. This is continued until all of the layers have been removed and arranged as shown in Fig. 2. Remember that the top layer is always layer #1 as this will aid in preventing confusion in achieving the master solution. After removing the layers and placing them on the smooth surface, spread the blocks apart enough to be able to read all but the bottom faces. Next start solving the puzzle denoted by the color exposed and layer #5. If the solver decides that the first letter in the first row is "S" and there is some other letter in that position, then he may take a letter "S" from anywhere in the layers of the same color. If there are a number of "S" letters in such layers the solver must decide which spot can use the other letters contained on the block which is to be replaced by the "S." This procedure is continued until the five puzzles are completed and stacked on the rack as previously described. The other layers are solved in the same manner. Always remember, when shifting and interchanging blocks, to replace in kind the letters of the colors already solved if these letters appear to be correct. In addition, the solver may return and recheck color layers previously solved if he feels that such is desirable in view of developments encountered in solving subsequent puzzles.

When all of the puzzles have been solved then the master solution has been obtained and may be checked against the solutions given.

It will be obvious that upon the solution of two or three of the color layers the remainder will automatically be solved. This may be obviated by employing a few blocks which have more than three of their colored surfaces bearing the same letter on their respective faces. This would mean that the solver would not be likely to have a complete solution until he had solved more than the number of colored layers having blocks with the same letters on their respective faces. This theory may be developed to the degree desired to achieve the proper level of complexity.

This puzzle has been shown and described using cubical blocks to form a cubical assemblage of blocks, obviously other block shapes may be used. The final assemblage of blocks may be of any shape desired as long as the layers are separable by means of a "slicer member," otherwise it would be a tedious task to remove all of the blocks from the layers one by one.

Instead of coloring the faces of the blocks any suitable means may be used to designate the specific faces and their relationship to each other.

Although only one embodiment of this invention has been shown and described, it is to be understood that no limitations are intended other than those imposed by the scope of the appended claims.

Having thus described my invention, what I claim as novel and desire to secure by Letters Patent of the United States is:

1. A three-dimensional puzzle game comprising in combination; a plurality of blocks, said blocks being arranged to form a number of rectangles of equal size, said rectangles being stacked one on the other to form a rectangular assemblage of blocks, a box for encasing the rectangular assemblage, said box comprising two racks each rack having a bottom and two sides exending perpendicularly upward from two adjacent edges thereof so that the box may be placed down on any face and one of the racks may be removed therefrom without disturbing the rectangular assemblage of blocks carried therein.

2. The invention as described in claim 1 wherein the blocks have rounded edges and the bottom of each rack is relatively thin so that it may be easily inserted between adjacent layers of blocks.

3. A three-dimensional puzzle game comprising, a plurality of blocks, each block having each of its faces inscribed with a character, the faces of each block bearing a different surface designation, these designations being so positioned that the respective faces of each block will bear an identical designation, the blocks being arranged in a plurality of symmetrical figures of equal size with the same face designation exposed upwardly on each block to constitute a plurality of puzzles having independent solutions, these symmetrical figures of blocks being stacked one on the other to form an assemblage with all of the blocks in any face being of the same designation so that the independent solution on each respective face of each symmetrical figure of the assemblage is interrelated to produce a master solution wherein all of the puzzles are solved at the same time.

4. The invention as described in claim 3 and wherein the blocks are rectangular solids combined to form a rectangular solid assemblage of blocks.

5. A three-dimensional puzzle game comprising in combination, a plurality of cubical blocks, each block having each of its faces inscribed with a character, the faces of each block being differently colored with the respective faces on every block bearing the same color, the blocks being arranged with the same color face exposed upwardly on each block to form squares of one color to constitute a plurality of puzzles having independent solutions, the squares being stacked one on the other to a height equal to the side of the square thereby forming a cubical assemblage of blocks, so that the independent solutions on each respective face of each square of blocks comprising the assemblage is interrelated to produce a master solution wherein all of the puzzles are solved at the same time, a box adapted to encase the assemblage of blocks, said box comprising two racks, each rack having a bottom and two sides extending perpendicularly upward from two adjacent edges thereof so that the box may be placed down on any face and one of the racks may be removed therefrom without disturbing the cubical assemblage of blocks carried therein.

6. The invention as described in claim 5 and wherein the blocks have rounded edges and corners and the bottom of each rack is relatively thin so that it may be easily inserted between adjacent layers of blocks.

7. A three-dimensional puzzle comprising, a plurality of layers of blocks, each block having each of its faces inscribed with a character, the faces of each block bearing a different surface designation so positioned that the respective faces of each block will bear an identical designation, the blocks in each layer being arranged so that

the same face designation will be similarly oriented, the upwardly exposed faces of the blocks in each layer being arranged to provide the solution of an independent puzzle, said layers being assembled one on top the other to form an assemblage of blocks, each assembled layer having on its respective faces characters which coact with the contiguous characters on the aligned respective faces on the blocks in the other layers to form additional groups of characters which may be arranged to form solutions to additional puzzles designed to be interrelated to the other puzzles.

References Cited in the file of this patent

UNITED STATES PATENTS

752,739	Wilkins	Feb. 23, 1904
1,465,637	Goss	Aug. 21, 1923
1,568,576	Stout	Jan. 5, 1926
1,604,127	Lambert	Oct. 26, 1926
1,964,007	Parks	June 26, 1934
2,386,114	Hayes	Oct. 2, 1945
2,705,555	Brenner	Apr. 5, 1955