

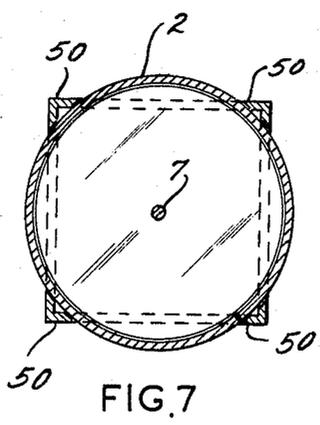
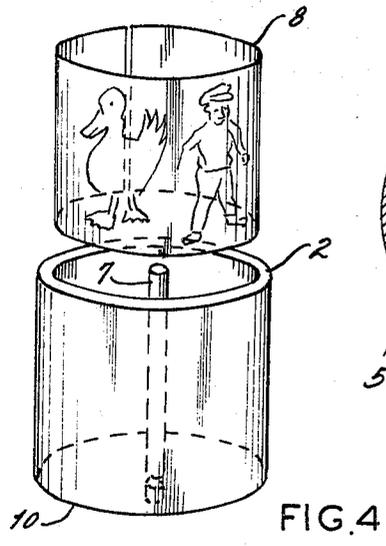
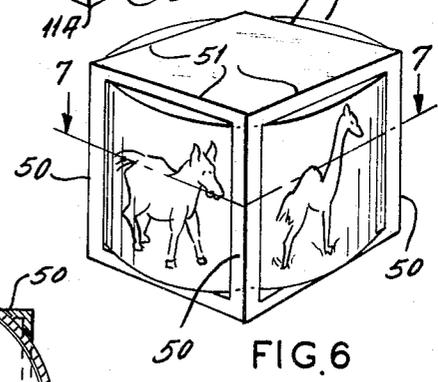
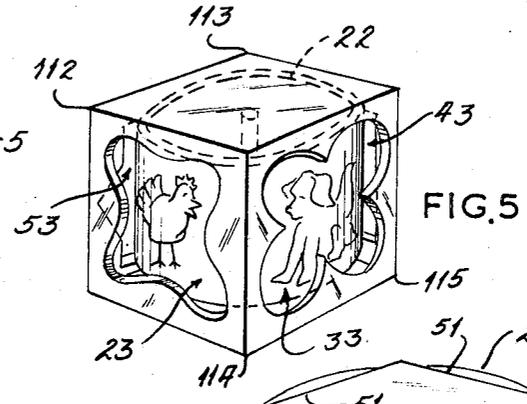
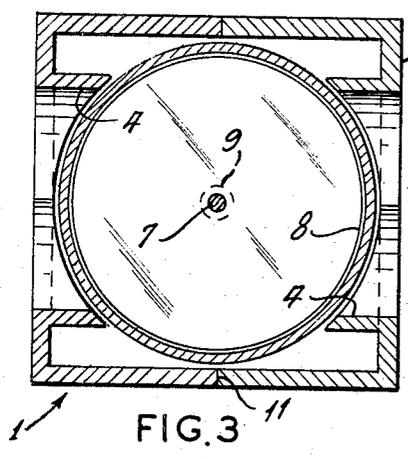
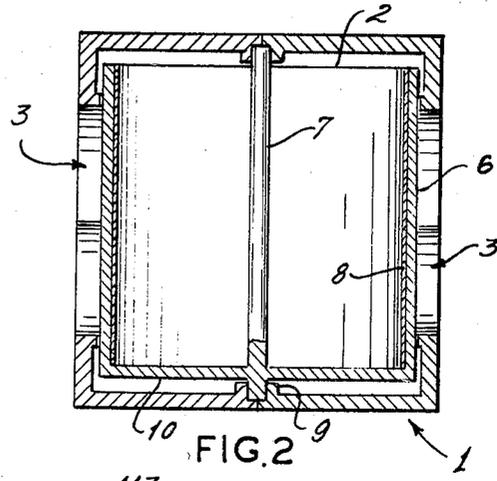
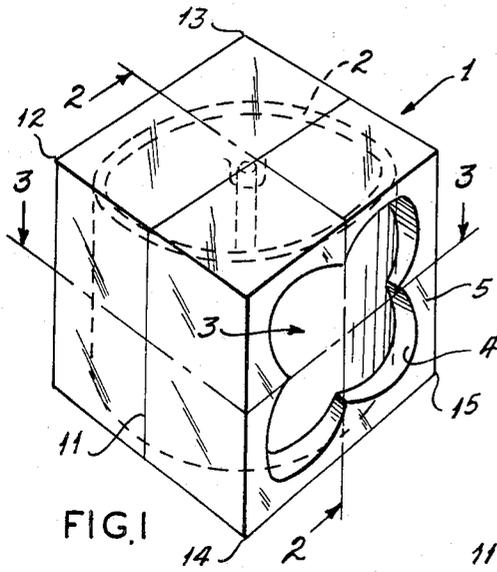
Jan. 13, 1970

B. W. TAYLOR
STACKABLE TOY BLOCK HAVING VIEWABLE DESIGN
ROTATABLY MOUNTED THEREIN

3,488,880

Filed Oct. 17, 1966

2 Sheets-Sheet 1



INVENTOR:
BEVERLY W. TAYLOR
BY *[Signature]*
ATTORNEY.

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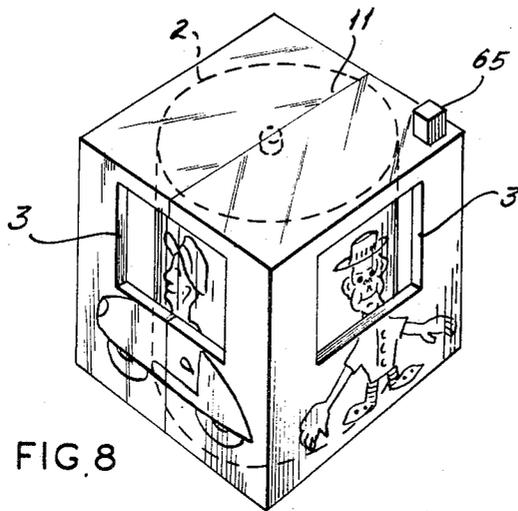


FIG. 8

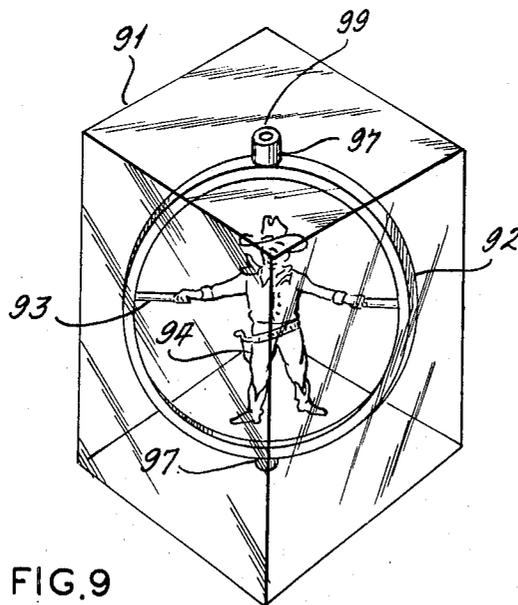


FIG. 9

INVENTOR:
BY BEVERLY W. TAYLOR
Beverly W. Taylor
ATTORNEY,

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3,488,880

STACKABLE TOY BLOCK HAVING VIEWABLE DESIGN ROTATABLY MOUNTED THEREIN

Beverly W. Taylor, Hermann, Mo., assignor to Steven Manufacturing Company, Hermann, Mo., a corporation of Missouri

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8 Claims

ABSTRACT OF THE DISCLOSURE

A stackable toy block containing a rotatable design bearing means, viewable at one or more sides of the block. In the preferred embodiments the design bearing means comprise a cylinder in the form of a transparent cup having an axial mounting rod rotatably mounted between bosses in the top and bottom of the block. A strip with designs printed on it is mounted within the cup. In another embodiment the rotatable design bearing means comprise a ring which in turn rotatably supports a figure having an axis of rotation perpendicular to the axis of rotation of the ring. Mechanical means may be provided for rotating the design bearing means.

This invention relates to toy building blocks.

One of the objects of this invention is to provide a toy building block of an unusual and attractive character.

Another object is to provide such a block in which a design viewable at a side of the block can be changed.

Another object is to provide a toy building block having different designs selectively viewable one at a time at a side of the block.

Another object is to provide such a block which is sturdy, economical and simple to manufacture, and easily manipulable by children.

Other objects will become apparent to those skilled in the art in the light of the following description and accompanying drawing.

The term "design" is used herein to designate anything decorative, either two or three dimensional.

In accordance with this invention, generally stated, a toy building block is provided having means rendering the block stackable in relation to other similar blocks including a top and bottom, with supporting means on their inner surfaces rotatably supporting a design bearing means. The means rendering the block stackable may be the smooth parallel outer faces of the top and bottom or may include other connecting means. The supporting means together form means movably securing the design bearing means within the block. The supporting means may be bosses in the form of circular flanges, holes extending through the top and bottom, pins, or other standard means. The design bearing means carries upper and lower supports which complement the supporting means on the top and bottom of the block and which are engaged by them. A design carried by the design bearing means is visible at one side, at least, of the block. The design may be made visible by a number of means. For example, the block may be made of clear plastic, a side of the block may be provided with a decorative window, or the design may extend out through a side of the block.

In the preferred embodiment of the block of this invention, the design bearing means is a cylinder. The cylinder is visible and manually rotatable through at least one side of the block, either through a decorative window, or, in an embodiment in which the diameter of the cylinder is somewhat larger than an edge of the cube, immediately outside a window. Preferably the cylinder is

in the form of a hollow topless cup made of clear plastic, with an axial mounting rod. A flexible band on the outer surface of which are designs or pictures may be positioned with its outer surface flat against the inside face of the cup.

In the drawing, FIGURE 1 is a view in perspective of one illustrative embodiment of block of this invention; FIGURE 2 is a sectional view taken along the line 2—2 of FIGURE 1;

FIGURE 3 is a sectional view taken along the line 3—3 of FIGURE 1;

FIGURE 4 is a view in perspective of a preferred embodiment of cylindrical cup for use in this invention; FIGURE 5 is a view in perspective of another embodiment of block of this invention;

FIGURE 6 is a view in perspective of still another embodiment of block of this invention;

FIGURE 7 is a sectional view taken along the line 7—7 of FIGURE 6;

FIGURE 8 is a view in perspective of still another embodiment of block of this invention; and

FIGURE 9 is a view in perspective of still another embodiment of block of this invention.

Referring now to FIGURES 1—8 for the preferred embodiment of this invention, reference numeral 1 indicates a completed block of this invention. The block 1 contains a rotatable cylinder 2 which is viewable through a window 3 in one side 5 of the block 1. A baffle 4 integral with the side 5 of the block 1 provides only a narrow gap between the window 3 and the rotatable cylinder 2. The preferred form of the rotatable cylinder 2 is a hollow transparent cup 6 having an axial support rod 7 secured to its base 10. The support rod 7 may be integral with the cup 6 at its base end. The support rod or shaft 7 has ends which are supports rotatably supported in the block 1 by bosses in the form of circular flanges 9 in the top and bottom walls of the block 1. Before the block is assembled, a strip of paper 8 with printed designs on one side is placed along the inner face of the side wall of the cup 6, with the designs facing out.

The block 1 must be made in more than one piece and then assembled. The "halves" of the block need not, however, be of the same size. The block is preferably divided along a vertical plane 11 parallel with a window 3 of the block. This makes for easy molding of the block from plastic. If more complicated machinery is used in forming the block, however, the block may be split in a number of other ways, as for example from one edge 12—13 of the block to a diagonally opposite edge 14—15. The block could also be formed in one piece except for its top, and a separate top provided.

The block is assembled by placing the plastic cup in position on one "half" of the block, positioning the other half of the block and securing the two halves of the block together.

It will be seen that although the cup 6 is open at its top, and the design bearing strip may be placed loose in the cup, when the block is assembled the design is totally protected.

Although the block shown in FIGURES 1—3 is preferred, numerous variations of the preferred embodiment of the block of this invention can be made. As shown in FIGURE 5, the baffle 4 may be omitted. This variation has the advantages that it allows windows 23, 33, 43, 53 to be cut in each side face of the block, allows easy molding by dividing the block along a diagonal, from an edge 112—113 to a diagonally opposite edge 114—115, and makes the block lighter. Its disadvantage, of course, is that a child's finger could conceivably be caught between the edge of a window and the cylinder 22. The seriousness of this danger is reduced by the fact that the cylinder 22 is both rotatable and very smooth, and can be reduced

still more by careful smoothing and rounding of the inner edges of the windows 23, 33, 43 and 53.

The disadvantage of the block shown in FIGURE 5 may be cured by making the diameter of the cylinder 2 somewhat greater than an edge of the cube, as shown in FIGURES 6 and 7. The corner posts 50 are too close to the cylinder to allow a finger to be caught between them. However, the top of the cylinder 2 must be closed, or the clear plastic of which the cylinder is made must be thick enough, or the edges 51 of the top of the block must be rounded slightly in plan to protect the design bearing band within the cylinder totally.

In still another variation of the preferred embodiment of the block of this invention, shown in FIGURE 8, the windows 3 are made relatively small, and the side faces of the block are decorated with designs or parts of pictures which complement the designs carried on the cylinder 2.

As also shown in FIGURE 8, the block of this invention may be provided with any common spinning mechanism actuated by a push button 65 or the like. Use of these mechanisms impairs the usefulness of the block, however, unless a push button with a very weak return spring is used, so that the weight of another block placed on it keeps the push button depressed, or the blocks are stacked with a different side abutting, or a hollow on the bottom of each block is provided to permit flush stacking of one block upon the other.

Although the cylindrical form is preferred as the design bearing means, numerous variations are possible. Thus, the design bearing means may be a ring, as shown in FIGURE 9. In this embodiment, the block 91 is made of clear plastic with holes 99 in its top and bottom. The holes 99 rotatably hold stems 97, and thus rotatably support the ring 92. The ring 92 in turn, rotatably supports a shaft 93 perpendicular to the axis of rotation of ring 92. The shaft 93 carries a figure 94 weighted at its lower end. The figure 94 will thus turn to remain upright as the block is turned. In this embodiment, the design bearing ring 92 rotates automatically with movement of the block, and thus, no provision for manual turning is needed.

Numerous other variations in the construction of the block of this invention, within the scope of the appended claims, will occur to those skilled in the art in the light of the foregoing disclosure. Thus, for example, in the preferred embodiment the cylinder 2 may contain one or more solid figures, may be made of different materials, or may be printed with a decorative design on its outer face. The cylinder may also carry designs facing perpendicular to the axis of rotation, so the "top" and "bottom" of the block are normally held in vertical position. The cylinder may then be weighted on one side to obviate the need for turning it manually.

The possible variations in the design bearing means are limitless. Vertical flat pieces of different geometries, spheres, and helices are but a few of the other possible design bearing means. The design bearing means, the design carried by them, or the sides of the block may be purely decorative or may form a part of a game or the like. The mounting means on the top and bottom of the block are preferably at the center of these faces but may be off-set. Although the block is preferably made of plastic, it may also be made of wood or other material. The outer faces of the top and bottom of the block may be smooth or may include some connecting means for combination with other blocks. The halves of the block may be of the same or different colors. These variations are merely illustrative.

Having thus described the invention, what is claimed and desired to be secured by Letters Patent is:

1. In a toy building block having means rendering said block stackable in relation to other similar blocks including a top and a bottom parallel to the top, and having sides attached to the top and the bottom, the improvement comprising a single design bearing means within said block, said design bearing means comprising a cup having an upper support and a lower support, said cup being made of a transparent material and being open at its top; a strip mounted within said cup; means movably securing said design bearing means within said block including a first supporting means on an inside face of said top adapted to engage said upper support, and a second supporting means on an inside face of said bottom adapted to engage said lower support, whereby said design bearing means is rotatably supported between said first supporting means and said second supporting means, and means rendering said design bearing means viewable at different positions of rotation at at least one side of said block.

2. The improvement of claim 1 wherein the upper support and lower support are the ends of a shaft extending axially through the cylinder and attached to it.

3. The improvement of claim 1 wherein the cylinder is radially totally contained within said block.

4. The improvement of claim 1 wherein the cylinder is radially partially contained within said block.

5. The improvement of claim 1 wherein said means for rendering said design bearing means viewable comprises a decorative window in one of the sides of the block for selective viewing of the design bearing means.

6. The improvement of claim 5 wherein sides of the block having windows also have designs which complement designs carried by said design bearing means.

7. The improvement of claim 1 wherein the first supporting means and the second supporting means are circular flanges integral with the top of the block and the bottom of the block respectively.

8. The improvement of claim 1 wherein the first and second supporting means are respectively at the geometric centers of the top and bottom of the block.

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F. BARRY SHAY, Primary Examiner.

U.S. Cl. X.R.

35—71; 40—68; 46—47; 273—155