

April 4, 1961

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2,977,688

EDUCATIONAL CUBIC TOY DEVICE

Original Filed Nov. 25, 1957

3 Sheets-Sheet 1

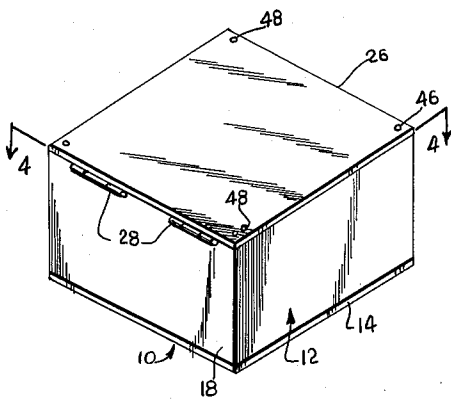


Fig. 1.

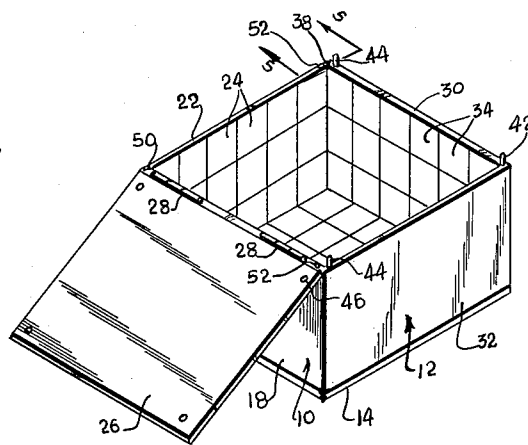


Fig. 2.

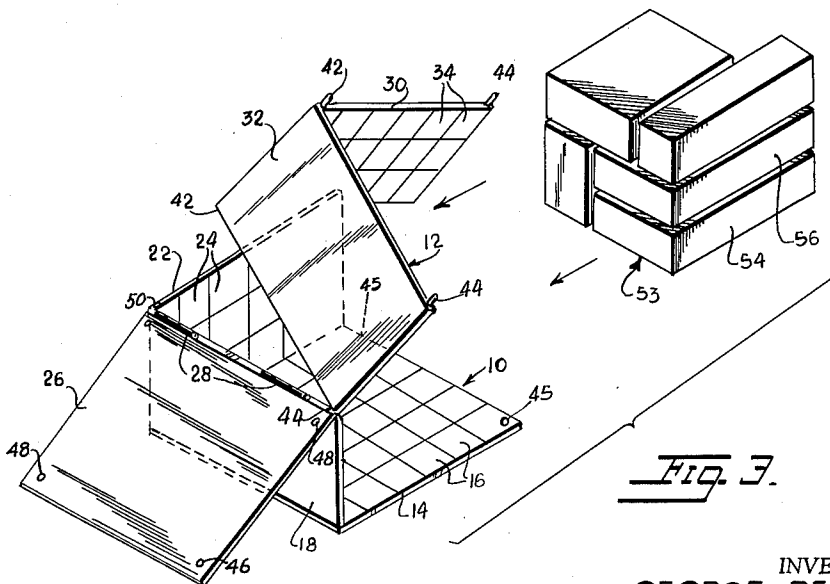


Fig. 3.

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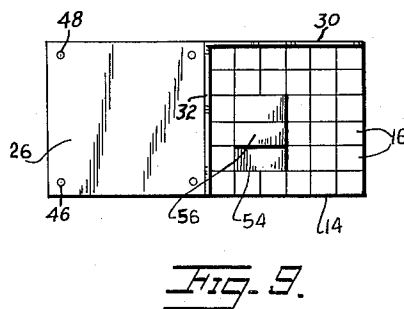
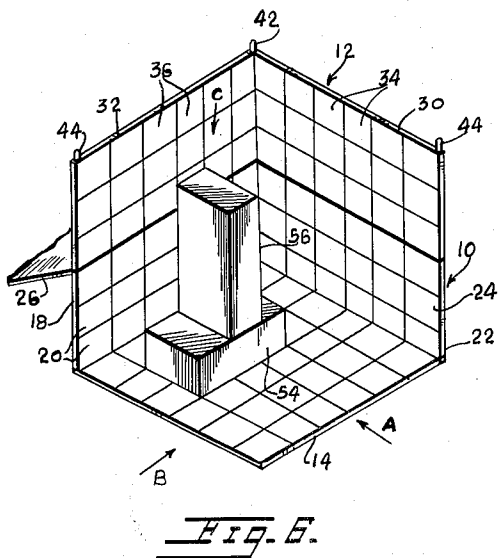
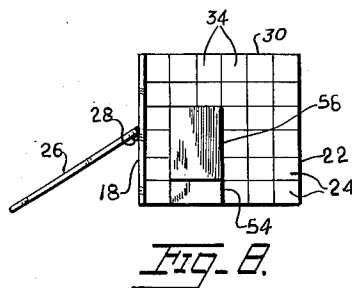
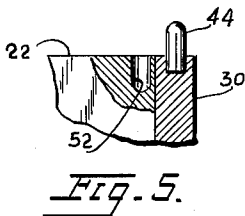
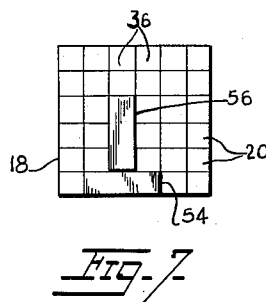
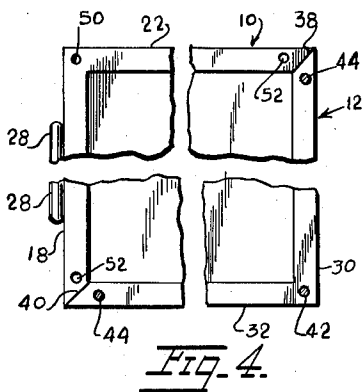
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3 Sheets-Sheet 2



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EDUCATIONAL CUBIC TOY DEVICE

Original Filed Nov. 25, 1957

3 Sheets-Sheet 3

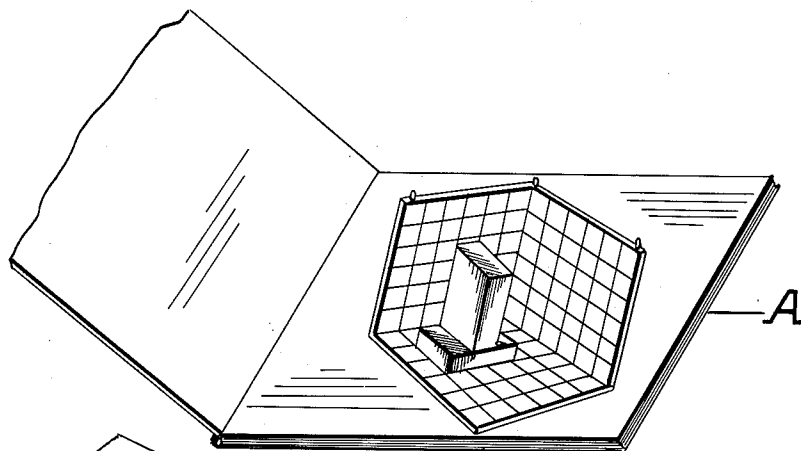


Fig. 12.

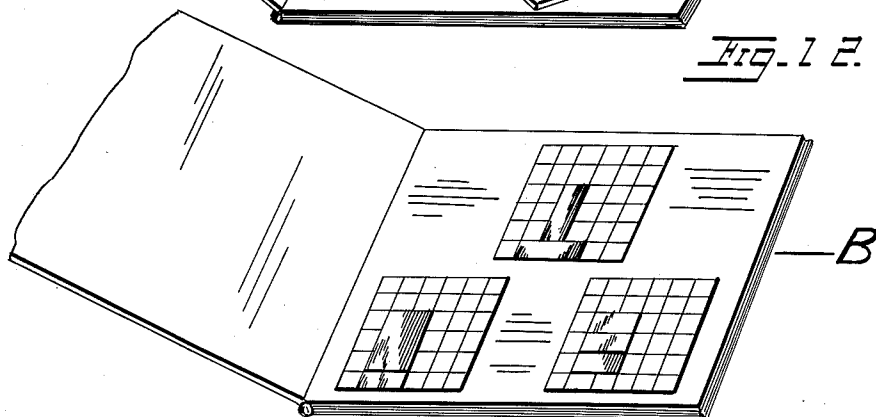


Fig. 13.

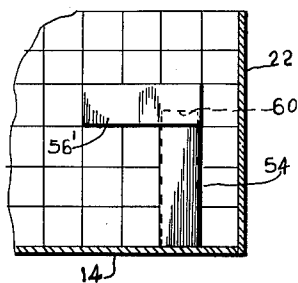


Fig. 11.

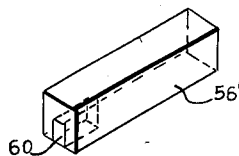


Fig. 10.

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EDUCATIONAL CUBIC TOY DEVICE

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Substituted for abandoned application Ser. No. 698,688, Nov. 25, 1957. This application Oct. 5, 1959, Ser. No. 844,257.

4 Claims. (Cl. 35—26)

This invention relates to educational toys, and more particularly has reference to a toy which is designed to provide valuable instruction, while at the same time affording considerable amusement, in respect to the showing of geometrical, three-dimensional projections in perspective, front elevation, top plan and side elevation. This is a substitute for my abandoned application, filed on November 25, 1957, Serial Number 698,688.

The main object of the present invention is to provide a toy which will include a background in a three-sided container, which background will be so marked as to provide visual alignment markings used in association with any of a plurality of blocks disposed within the container.

Another object is to provide, in a device of the character stated, a novel container construction such that ordinarily all the blocks will be confined within a completely enclosed receptacle, which receptacle can be opened and converted into a three-walled background-producing structure double the normal height of the receptacle.

A further object is to provide a container construction of the character described, which, though having the desirable characteristics noted above, will yet be capable of manufacture at a very low cost.

Still another object is to provide a device of the type stated that will permit the erection, piling, or other arrangement of block-like forms in any of a great variety of displays, all of which have value in teaching geometrical projections.

For further comprehension of the invention, and of the objects and advantages thereof, reference will be had to the following description and accompanying drawings, and to the appended claims in which the various novel features of the invention are more particularly set forth.

In the accompanying drawings forming a material part of this disclosure:

Fig. 1 is a perspective view of the container, in its fully closed condition, as it would appear when not in use.

Fig. 2 is a perspective view of the container with the lid open.

Fig. 3 is a perspective view of the container, with the removable walls of the container being shown moved partially to their use positions, blocks for use with the container being shown.

Fig. 4 is an enlarged plan sectional view on line 4—4 of Fig. 1 in which portions have been broken away.

Fig. 5 is a still further enlarged, detail sectional view substantially on line 5—5 of Fig. 2, parts being shown broken away.

Fig. 6 is a perspective view showing the device as it appears when in use, the lid being partially broken away.

Fig. 7 is a reduced elevational view of the device as it appears when seen from one side.

Fig. 8 is a view like Fig. 7 in which the device is viewed from a second open side.

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Fig. 9 is a view like Fig. 7 in which the device is seen from above.

Fig. 10 is a perspective view of a modified form of playing block.

Fig. 11 is a view similar to Fig. 6 showing a block of Fig. 10 in use.

Fig. 12 is a fragmentary perspective view of a booklet used with the container.

Fig. 13 is a similar view of another booklet used.

Referring to the drawings in detail, designated generally at 10 is a receptacle, in the form of a closed, box-like container. This includes a removable side wall 12.

Considering the main part of the container, this has a flat, square floor or bottom wall 14 which is marked off on its top surface by crossing, regularly spaced, perpendicularly related lines to form squares 16 all equal to one another in area.

Fixedly secured to one edge of the wall 14 is a first side wall portion 18 extending vertically upwardly therefrom and marked off by crossing vertical and horizontal lines into squares 20 (see Fig. 6). Squares 20 are equal in area to the squares 16 and, in fact, all squares of all walls to be described herein will be identical to one another. Therefore, it may be appropriately said that wall portion 18 is "three squares high," that is, the height of the wall portion 18 is half the distance between any two opposed walls or edges of bottom floor 14.

Also fixedly secured to bottom wall 14, at right angles to wall portion 18, is a second side wall portion 22 marked off into squares 24.

A lid 26 is connected by hinges 28 to the top edge of the wall portion 18, and is adapted to swing to a normally closed position shown in Fig. 1. When the lid is open it has no further function with respect to the operation of the device.

The wall 12 is of right-angled shape, and complements the side wall portions 18 and 22. Wall 12 includes a third side wall portion 30 and a fourth side wall portion 32 marked off into squares 34, 36, respectively.

Referring to Fig. 4, the free ends of the wall portions 18, 22 are beveled and mating bevels are formed on the free ends of the wall portions 30, 32.

The beveled ends are designated at 38, 40, and as will be noted, in the top surface of the side wall 12 there are embedded upwardly projecting pegs 42, 44. A peg 42 is disposed at the juncture between the perpendicular wall portions 30, 32, while the pegs 44 are disposed adjacent the beveled ends 38, 40. Similar pegs are provided at the bottom of the side wall, engaging in complementary openings 45 (see Fig. 3) of the bottom wall 14.

In the lid there are formed openings which receive the pegs 42, 44 when the lid is closed, the openings of the lid being designated at 46, 48 and receiving the pegs 42, 44, respectively (see Fig. 1).

At the juncture of the wall portions 18, 22 there is formed an upwardly opening socket recess 50 and similar recesses 52 are formed adjacent the outer ends of said wall portions. These recesses receive the pegs 42, 44 when the side wall 12 is lifted out of its normal, Fig. 2, position and is swung over to its Fig. 6, use position, in the manner shown in Fig. 3.

At this time, there will be defined a structure having two high side wall portions and a bottom wall, that is, the structure will be open at two sides and at its top as clearly shown in Fig. 6. In this structure there can be placed a plurality of blocks forming part of a set of blocks generally designated at 53 in Fig. 3. When the blocks are not in use, they are confined in the closed container. The blocks may be of the same or of various sizes, shapes, etc., and as a typical example, two of the blocks designated at 54, 56 may be placed on the bottom

wall 14 upon selected squares, in a selected geometrical arrangement.

The blocks may also be formed of any suitable material and may be of the same or contrasting colors.

Purely by way of example, there is shown in Fig. 6 an arrangement in which one block 54 is disposed horizontally covering six squares of the floor 14. The other block 56 is extended vertically on the block 54, medially between opposite ends of the block 54. Block 56 is one square in thickness, and two squares in width, and this is true also of the block 54, each block being three squares in length. This is merely illustrative of one example that can be used.

In any event, when the wall portions 30 and 32 are positioned upon the wall portions 18, 22, as shown in Fig. 6, the resultant side walls will be six squares high and six squares wide, the same as the floor 14. Therefore, the device can be viewed either from the location A, the location B, or the location C in Fig. 6.

When the device is seen from the location A, the components appear as in Fig. 7, and one can line up the blocks 54, 56, selected squares of the side wall providing a background for the same.

When the device is viewed from the location B, that is, through the other open side the blocks now appear as in Fig. 8. Then, when the device is viewed from above, that is, from the location C through the open top, the blocks appear as in Fig. 9. In each case, the blocks are lined up with squares on the background surface, providing valuable studies in geometrical projections and how they appear when seen from various angles. Of course, a greater number of studies can be worked out, and these can be diagrammed on accompanying sheets of paper, booklets, etc., to be used in testing, so that the child or student is required to make selections as to which drawings represent a particular geometrical projection when view from a particular angle.

While the side wall 12 of the container composed of the side wall portions 30 and 32 is shown and described as being integrally formed, it will be understood that this side wall may be formed of two sections.

In Fig. 10 is illustrated a modified form of playing block 56' having a weighted device such as a piece of lead 60 embedded in one end thereof so that when superimposed on another block it will be supported in a balanced condition without fear of falling off the block. A block 56' is shown in supported condition on a block 54 in Fig. 11.

It is proposed to market the toy in a kit with a booklet A as shown in Fig. 12 and with a booklet B as shown in Fig. 13. Booklet A will contain teaching of geometrically constructed problems and booklet B will contain the corresponding answers, with views on the same page, as shown in Fig. 13.

The cubical blocks 56 may be similarly shaped or not and one of the booklets may include non-similar cubical bodies or blocks as problems and the other booklet may show the corresponding various views.

While I have illustrated and described the preferred embodiments of my invention, it is to be understood that I do not limit myself to the precise constructions herein disclosed and that various changes and modifications may be made within the scope of the invention as defined in the appended claims.

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

1. An educational toy comprising a box-like structure having a bottom and four side walls and open at the top, an openable hinged lid for closing the open top, two adjacent side walls being removable and shiftable as a unit onto the tops of the other two side walls,

the inner surfaces of said bottom and side walls being marked with intersecting lines forming squares guiding the positioning of at least one geometrical figure adapted to be placed on the bottom wall spaced from the two adjacent fixed side walls, and from the two supported-shifted side walls when said lid is open for viewing three-dimensional projections of said geometrical figure in perspective, front elevation, top plan and side elevation.

2. An educational toy comprising a box-like structure having a bottom and four side walls and open at the top, an openable hinged lid for closing the open top, two adjacent side walls being removable and shiftable as a unit onto the tops of the other two side walls, the inner surfaces of said bottom and side walls being marked with intersecting lines forming squares guiding the positioning of stacked blocks adapted to be placed on the bottom wall spaced from the two adjacent fixed side walls, and from the two supported-shifted side walls when said lid is open for viewing three-dimensional projections of said stacked blocks in perspective, front elevation, top plan and side elevation.

3. An educational toy comprising a box-like structure having a square bottom and four side walls and open at the top, an openable lid for closing the open top, two of said side walls being integral with each other and fixed to the bottom wall, the other two side walls being integral with each other and removable and shiftable as a unit onto the tops of the fixed side walls, the inner surfaces of said bottom and side walls being marked with intersecting lines forming squares guiding the positioning of stacked blocks adapted to be placed on the bottom wall spaced from the two adjacent fixed side walls and from the two shifted side walls when the lid is open for viewing three-dimensional projections of said blocks in perspective, front elevation, top plan and side elevation.

4. An educational toy comprising a box-like structure having a square bottom and four side walls and open at the top, an openable lid for closing the open top, two of said side walls being integral with each other and fixed to the bottom wall, the other two side walls being integral with each other and removable and shiftable as a unit onto the tops of the fixed side walls, means for removably supporting said other two side walls on the bottom wall, the inner surfaces of said bottom wall and side walls being marked with intersecting lines forming squares guiding the positioning of stacked blocks adapted to be placed on the bottom wall spaced from the two fixed side walls and from the two shifted side walls when the lid is open for viewing three-dimensional projections of said blocks in perspective, front elevation, top plan and side elevation, said means for removably supporting the other two side walls including opposed pegs carried at the ends and corner of said other two side walls, said fixed side walls having recesses at the end and corner thereof and said bottom wall having recesses in adjacent corners thereof for receiving the pegs on the other two side walls.

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