United States Patent [19]

Horowitz

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[54] **CUBICAL BLOCK FROM TWO AXIALLY FITTED IDENTICALLY MOLDED SECTIONS**

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[21] Appl. No.: **169,627**

[52] **U.S. Cl.** **108/161,** 52/311, 46/25

[51] **Int. Cl.** **A47b 13/00**

[58] **Field of Search** 52/306, 307, 311; 297/192, 193, 434; 46/24–26; 108/161, 153

[56] **References Cited**

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[57] **ABSTRACT**

The instant article is a cubical block, hollow or solid, formed from two geometrically identical molded sections, each diagonally cut so that the two sections are complementarily fitted axially to form a cube. Depending upon the particular materials used, the instant cube may be ornamental or structural, or useful as a furnishing.

6 Claims, 8 Drawing Figures

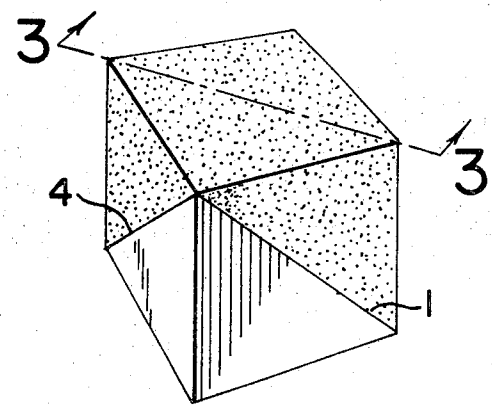


FIG. 1

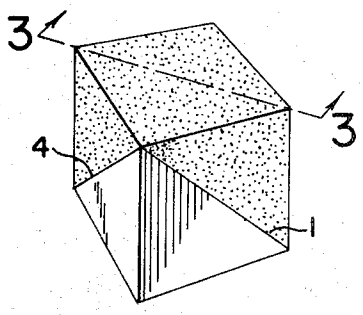


FIG. 7

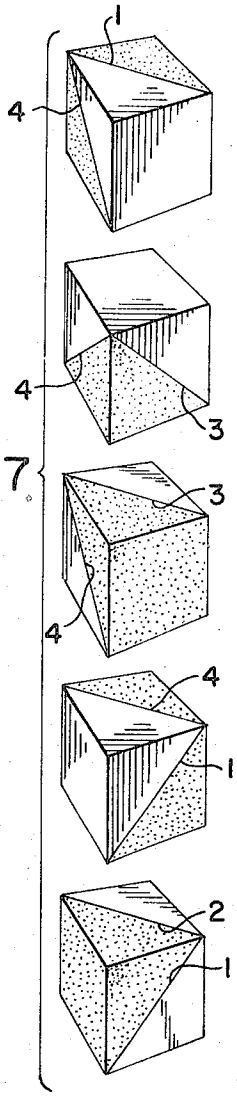
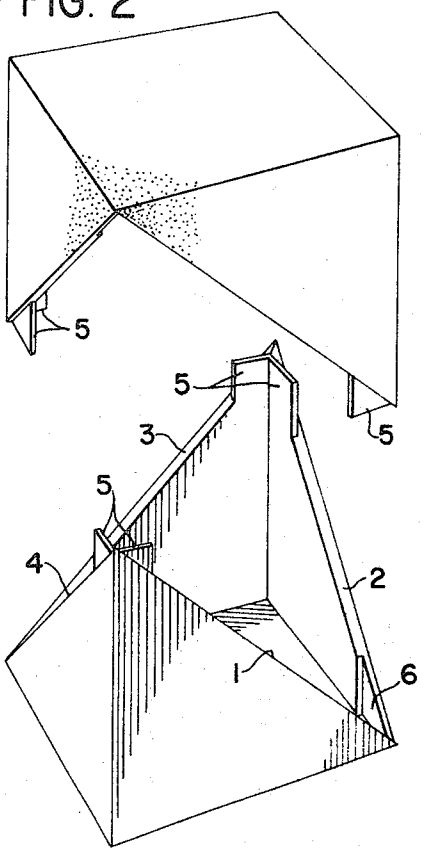


FIG. 2



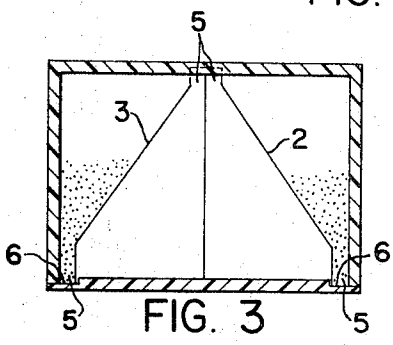


FIG. 3

FIG. 4

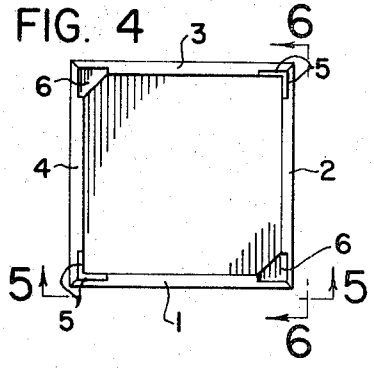
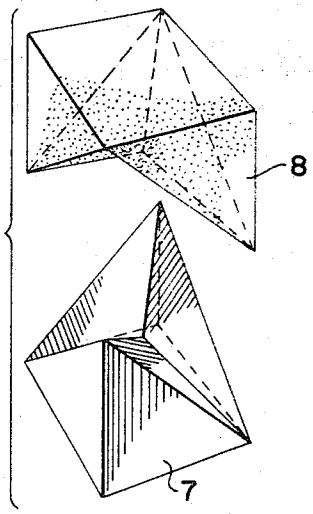


FIG. 8



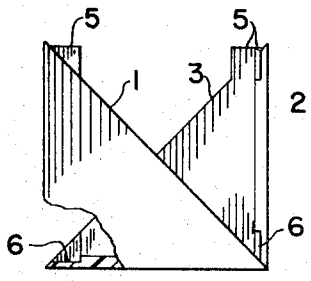


FIG. 5

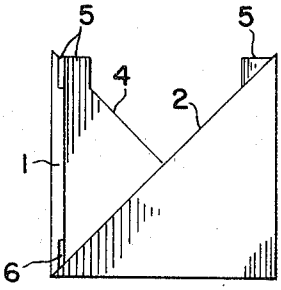


FIG. 6

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CUBICAL BLOCK FROM TWO AXIALLY FITTED IDENTICALLY MOLDED SECTIONS

BACKGROUND OF THE INVENTION

Concrete, masonry, and ceramic blocks are old in the art. Occasionally, structural and ornamental blocks have been made as cubes by molding the entire block in a cubical mold. In general, such blocks were solid, single color cubes, and were used, intermingled with rectangular, parallelopiped blocks for structural and design effects, the blocks being of different colors or having particular texture on at least one surface. The blocks were made of a suitable load-bearing building material, such as concrete, and were used, with conventional mortar, to face buildings. Solid cubes of concrete are heavy; furthermore, designs formed with solid cubes are limited to checkerboard-type patterns of squares. Diagonal sections were obtained by laboriously painting a diagonal pattern on the face of a cube. The cube of the instant invention is an optionally hollow cube of sufficient strength as a structural member, yet with four diagonally separated faces, formed because of the manner in which the instant cube is assembled, dispensing with the necessity of painting diagonal sections, the separation being that of color or texture.

Moving from the architectural to the furnishings field, it is well known that the cubical form is a particularly compelling module but difficult to use, from a design point of view, as furniture. The instant cube, because of its unique construction, is useful as a variably orientatable table, display stand, or hassock. In addition to the choice with respect to various orientations, further options may be included by using transparent and opaque fitted sections, or relatively rigid and relatively flexible fitted sections, or any desired combination of color, texture, transparency and rigidity for each of the two sections which are axially locked or fitted to form a cube.

SUMMARY OF THE INVENTION

It has been discovered that a cubical block, useful for a multiplicity of purposes, may be formed by interlocking or fitting two identically molded pieces in complementarily axial alignment one with the other to form a cube. The particular use to which the cube is put depends upon the materials from which it is formed, whether or not it is formed in a hollow or solid form, and particularly whether or not it is formed in disparate colors or materials.

It has been discovered that a strong structural body or an ornamental body may be formed by axially locking two identical sections to form a cube, each section being formed by diagonal cuts orthogonal to each vertical face of either a cube or, alternately, an open cubical box.

It has been found that an ornamental block, useful both as furniture and as a sculpture module, may be formed by interlocking two identical sections of a cube as described above, each section being of a different color, having a different texture, or differentiable transparency.

DESCRIPTION OF THE DRAWINGS

FIG. 1 is a general perspective view of an embodiment of a hollow cube formed by locking two geometrically identical sections, each of different color.

FIG. 2 is an exploded view of the two sections.

FIG. 3 is a cross sectional view, diagonally across the top face of the cube in a vertical plane.

FIG. 4 is an end view of a section.

FIGS. 5 and 6 are side views of the end view in FIG. 4.

FIG. 7 are several general views of the block showing different effects of two colors in combination.

FIG. 8 is an exploded view of a solid cube formed by fitting two geometrically identical solid sections.

PREFERRED EMBODIMENT OF THE INVENTION

It is often desired to have structural modules, such as blocks of stone, blocks of concrete, and the like, in cubical form. Architecturally, such blocks of marble, granite, or sandstone are used in the facings of buildings in such a way as to impart visual gradation of color to the face of the building so as to give the building a glowing effect. A classic example of such a building is the National Gallery of Art, in which this effect was utilized using marble. Other buildings have been faced with non-structural, square slabs of marble of different textures and different colors to provide a pleasing geometrical pattern. The cost of building a structure with ornamentation in addition to the structural requirements of the building is much greater than if the ornamentation could be provided simultaneously with, and in addition to structure. Thus, on occasion, cubes of concrete, mortar or other cementitious material have been poured individually, each with the desired texture and color of surface. The cubes were then used structurally, at the same time providing an ornamental effect. However, both the cost and the problems inherent with pouring and setting concrete in solid cubical blocks are distinct drawbacks. The problems of curing a solid concrete block of dimensions in excess of 1 foot cube are such as to make the manufacture of large concrete cubes both expensive and far too heavy with respect to the loads the block is designed to carry.

In one embodiment, the instant block, made from two identically molded or cast, relatively thin walled sections by axially fitting them in abutting contact with each other to form a hollow cube permits tightly controllable dimensions. The method for making cubes is inexpensive and simplified, but at the same time permits formation of articles which are attractive, have diagonally disposed colors or textures on four vertical faces, and possess exceptional finish and tolerances.

Again with respect to furniture, identical sections may be molded or cast of a plastic or a glass material so as to form a hollow cube which serves as a table or display stand. One section may be molded or cast of an opaque plastic, while the other may be molded or cast of a transparent one. Thus, in use, the cube formed by axially locking the opaque and the transparent sections together may be used as a table with the opaque side on top, or, alternatively, with the transparent side on top, or, again, with any combination of diagonally separated, transparent and opaque sides for the top and bottom.

Again, in another embodiment, an article of furniture, such as a combination table and hassock, may be formed by axially fitting, in abutting relationship, two geometrically identical solid sections, one formed from a relatively rigid plastic material and the other formed from a relatively spongy or flexible material. Specifically, one section may be formed from a rigid foamed polyurethane, while the other section may be formed

from a spongy foamed polyurethane. The solid sections are then axially fitted and glued together so as to form a cube. The cubical article may thus be used for a hassock or a seat when the relatively spongy side faces upwards, or for a serving table when the relatively rigid side is faced upwards. Alternately, both sections may be made of either a relatively solid or a spongy material, each having different textures or colors, or both. Any suitable plastic materials may be used to form the instant cubes. Solid, spongy sections are preferably formed from latex rubber or from synthetic resins such as foamed polyurethane. Relatively thin-walled sections used to form hollow cubes are preferably formed from thermoplastic or thermosetting synthetic resins such as a polyolefin, polyurethane or polyester, and most preferably polystyrene or acrylonitrile-butadiene-styrene polymer.

In the most preferred embodiment, the instant cube is used as an ornamental block which may be used simultaneously as a structural member to form geometrical patterns of pleasing effect. The patterns are formed because of the color, texture, or transparency of each section, and the completed composite requires no initial or subsequent painting, and no maintenance other than an occasional washing. As ornamental blocks, the instant cubes may be used as simple modules to form geometrical patterns in three dimensions. Since every block of the same two different colors is exactly alike, knowing the disposition of any two faces of a block determines uniquely the orientation of every other face. Thus, the use of the instant cubes as a sculpture module permits the building of structures in three dimensions having a geometrical pattern on one face which is uniquely interrelated to a pattern on another face.

Referring now to a particular embodiment of the instant cube formed from two geometrically identical sections axially lockable to form a hollow cube and referring to the drawings in particular, FIG. 1 is a general perspective view of the hollow cube formed from differently colored sections; example, a black and a white section. FIG. 2 is an exploded view of the cube, showing diagonal separations 1, 2, 3, and 4 of each vertical face. Referring to the lower section shown in FIG. 2, tabs 5 are provided at the upper edge of each diagonal and tabreceiving recesses 6 are provided at the lower end of each diagonal. Another method is to substitute locating pins for the tabs and pin-receiving holes for the tab-receiving recesses. The sections may then be secured by adhesively bonding them together at one or more points along the lines of contact of the sections. Alternately, the sections may be sonically welded together, as is known in the art, dispensing with the necessity for tabs and tab-receiving recesses, pins, and the like. FIG. 3 is a cross section elevation, taken through the secton 3—3 of the cube shown in FIG. 1, indicating the manner in which the tabs 5 are snugly accommodated in the tab-receiving recesses 6 to lock the two sections axially to form a cube with exceptionally closely controllable tolerances. Close tolerances are required, since a cube with sides which are not substantially identical will be an ill-fitting module in a geometrical pattern, and will displace the design in such a manner as to make the entire pattern noticeably and unacceptably imperfect. FIG. 4 is an end view of a single section, indicating the opposite placement of tabs 5 and the tab-receiving recesses 6. FIGS. 5 and 6 are side views of a single section. FIG. 7 displays several general perspective views of the instant cube in two different colors for the visual impact afforded by the various views. FIG. 8 is an exploded view of two solid, geometrically identical sections, one formed of a relatively rigid foamed polyurethane, indicated generally at 7, and the other formed of a relatively spongy, foamed polyurethane, indicated generally at 8. The two geometrically identical sections are fitted axially and adhesively bonded by any suitable adhesive for the materials chosen to form a cube useful as a combination table and hassock, depending upon whether it is used with the relatively rigid section facing up or the relatively spongy section facing up.

It will be apparent that the instant cube formed in the particular manner described hereinabove may be used in a variety of different ways in which ornamentation plays a key part. Because of the fundamental nature of the cube as a module, its formation from moldable or castable sections in either disparate colors or materials or in disparate textures may be utilized as an educational aid to demonstrate visual effects, including the visually misleading effects provided by otherwise perfect geometries, due to the biological peculiarities, optically, of the human eye.

It will be appreciated that the invention is not restricted to the particular uses described hereinabove, and it will be obvious that new and varied uses will continuously be found.

I claim:

1. An article useful as a structural or ornamental module, or both, formed by axially fitting two geometrically identical sections, complementarily, to form a cube having four vertical faces, each vertical face being diagonally divided, each of said identical sections being formed from a moldable or castable material having a different appearance from the other.

2. A table or display stand formed by axially locking two geometrically identical relatively thin-walled sections, complementarily, to form a hollow cube having four vertical faces, each vertical face being diagonally divided, one of said identical sections being formed from an opaque moldable or castable synthetic resin, the other being formed from a transparent moldable or castable synthetic resin, each section being equipped with means for interiorly locking said sections together.

3. A combination table and hassock formed by axially fitting two geometrically identical sections, complementarily, to form a cube having four vertical faces, each vertical face being diagonally divided one of said identical sections being formed from a relatively rigid moldable or castable synthetic resin, the other section being formed from a relatively spongy, molded or cast resin, each said section having a different appearance from the other.

4. A sculpture module useful as a structural or ornamental module to form geometrical composites, said module formed by axially locking two geometrically identical molded sections, complementarily, to form a hollow cube having four vertical faces, each vertical face being diagonally divided each of said identical sections being formed from a moldable synthetic resin having a different color, each of said identical sections having internal locking means which are concealed when Said sections are axially locked to form said module.

5. The article of claim 1 wherein said castable material is an organic synthetic polymerizable resin.

6. The article of claim 1 wherein said article formed axially fitting said sections complementarily are sonically welded in fixed abutting relationship to each other.

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