United States Patent

[11] **3,561,757**

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[54] **HINGED MODULAR PLAYGROUND BLOCK SYSTEM**
6 Claims, 11 Drawing Figs.

[52] **U.S. Cl.** **272/60,** 272/56.5; 35/72; 46/25
[51] **Int. Cl.** **A63b 17/00;** A63h 33/04
[50] **Field of Search** ..... 272/56.5, 60; 46/1, 16, 24, 25; 35/72; 34/6.4(All)

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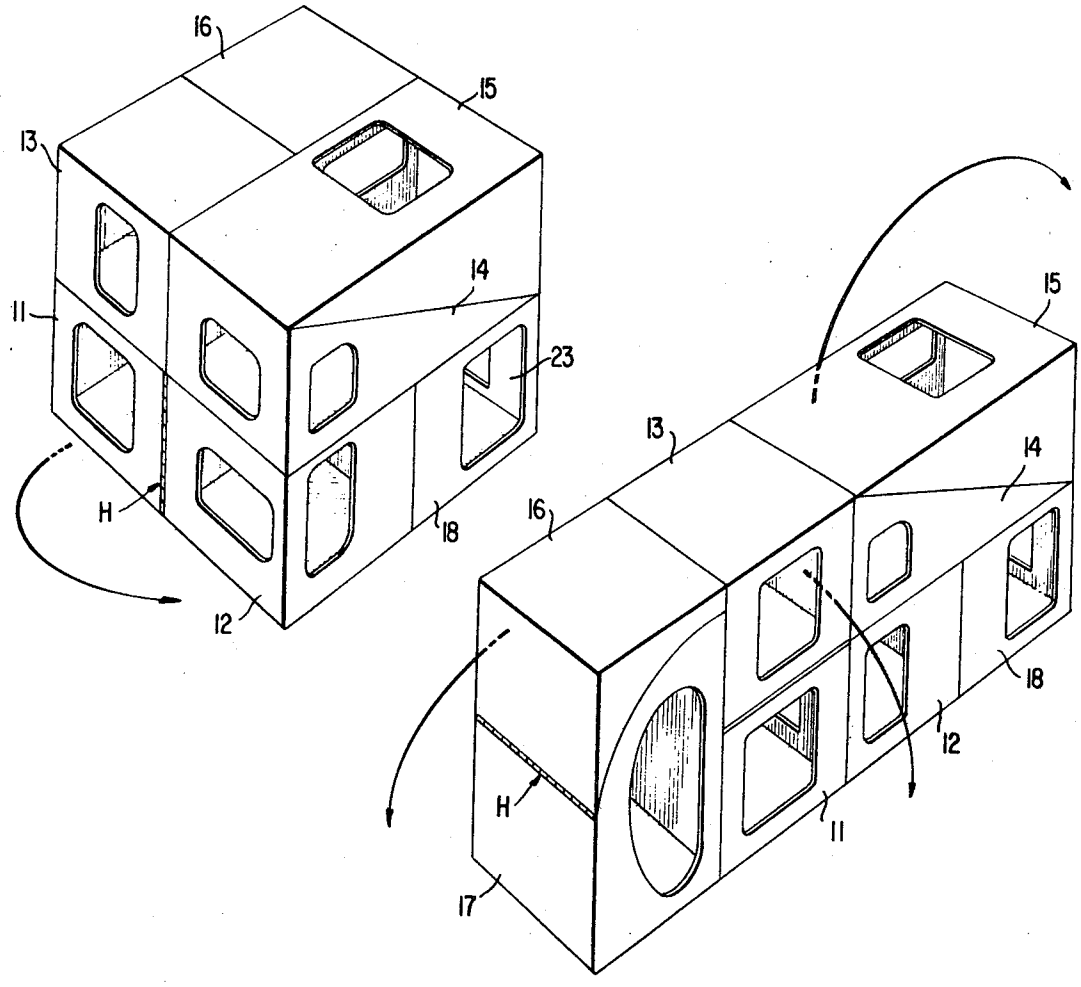
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ABSTRACT: A modular playground block system including a plurality of hollow block modules, each of which is hingedly connected to one other module, some of the hinges being vertically oriented and others horizontally disposed. Through passageways or ports connect from adjacent modules and at least two of the modules together forming an inclined plane for sliding and climbing.



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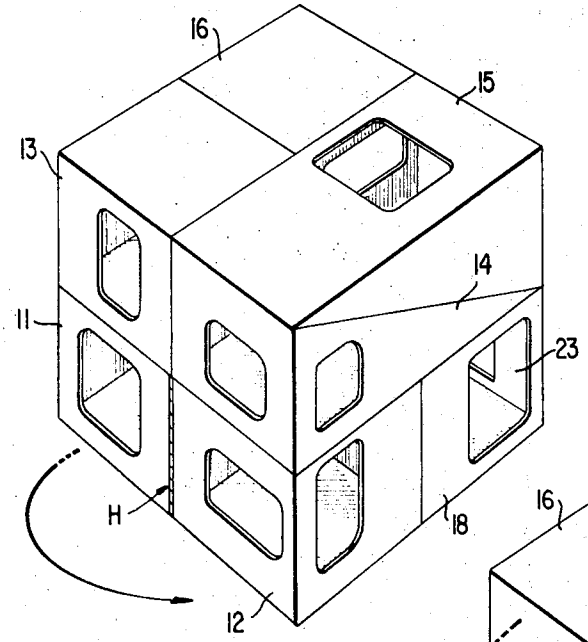


FIG. 1

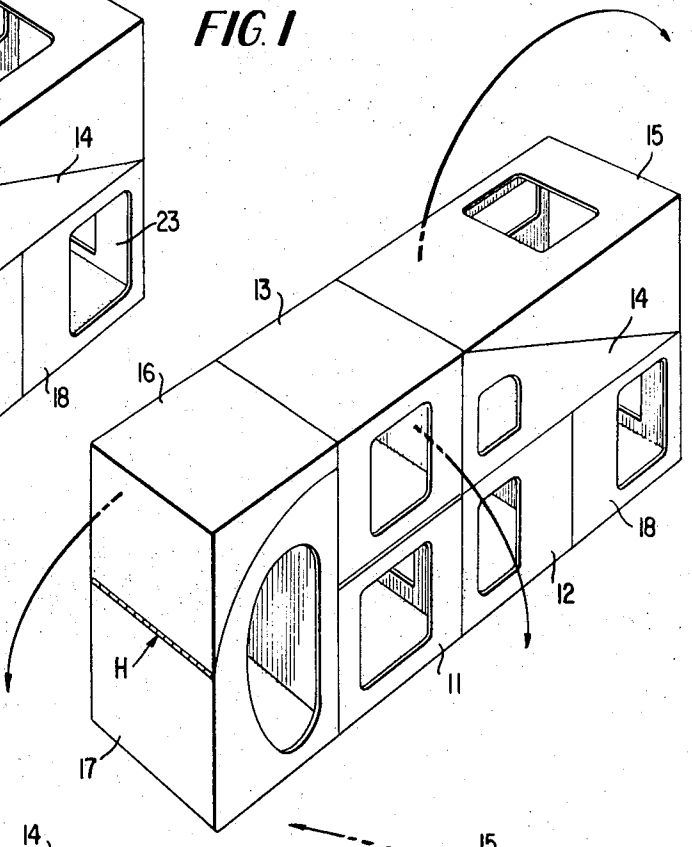


FIG. 2

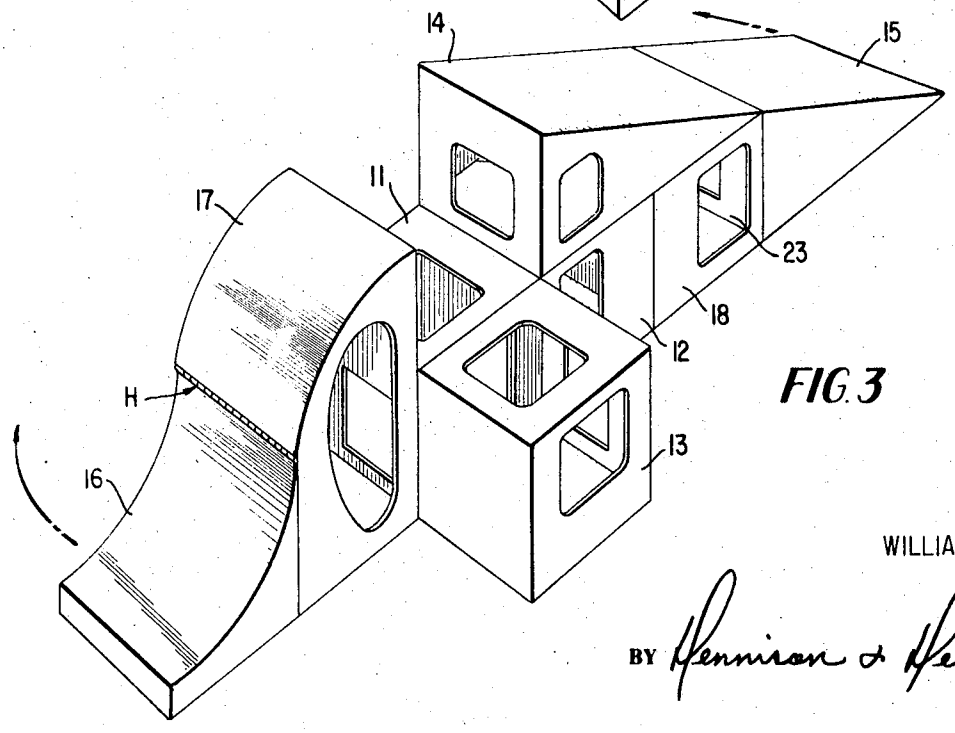


FIG. 3

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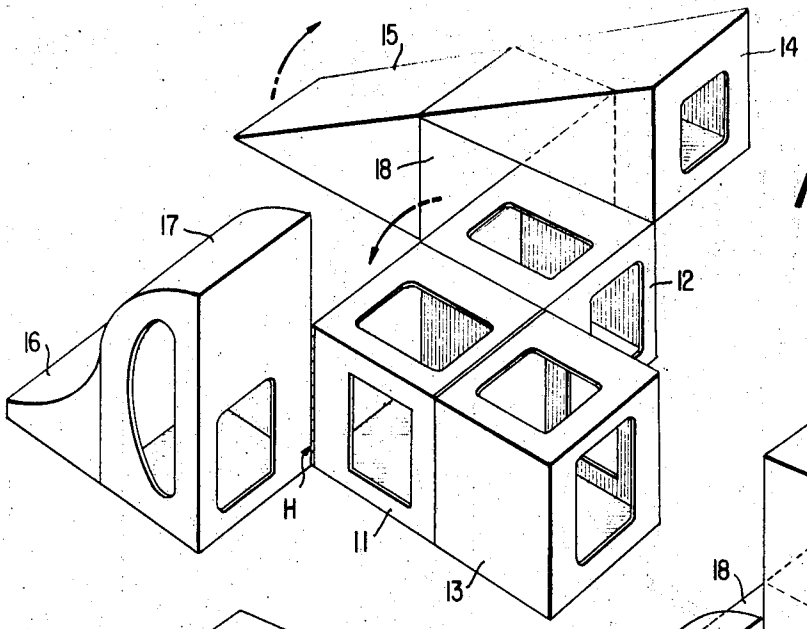


FIG. 4

FIG. 5

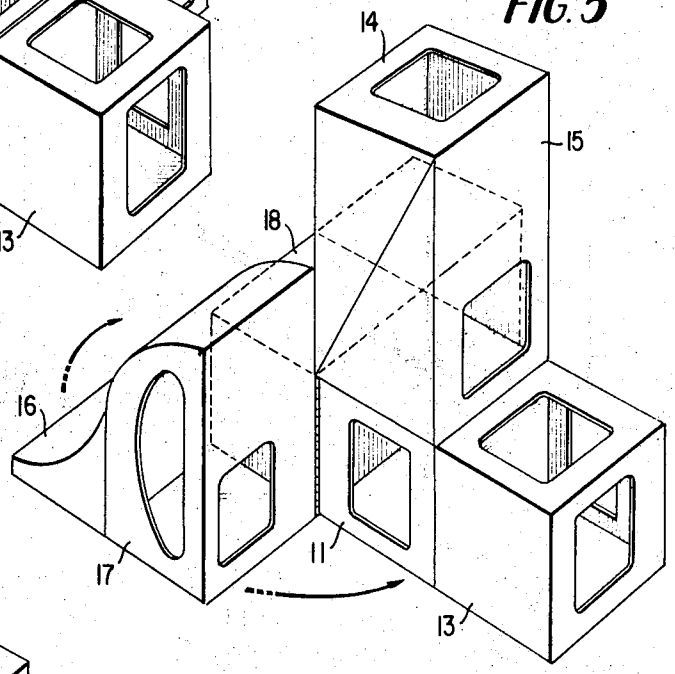
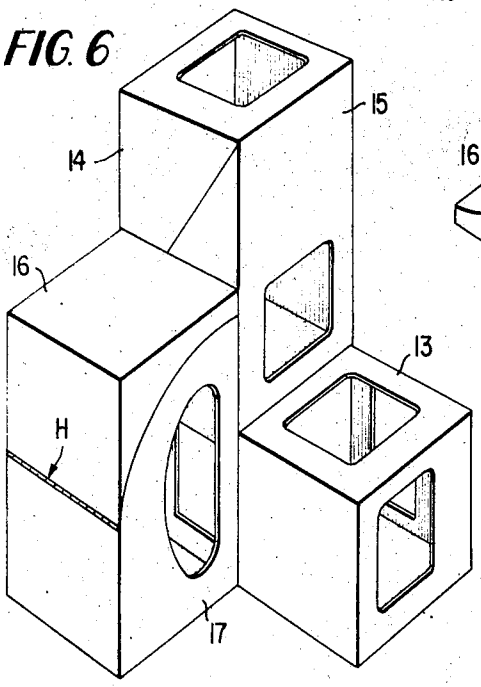


FIG. 6



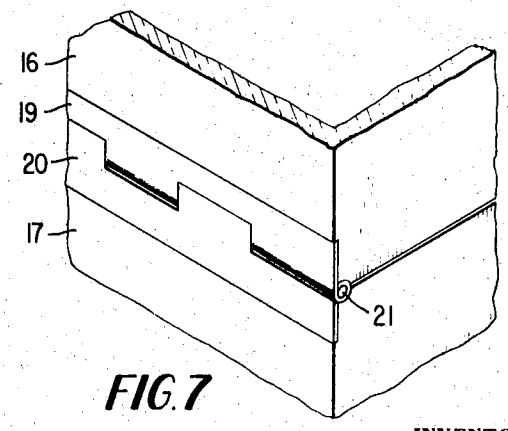


FIG. 7

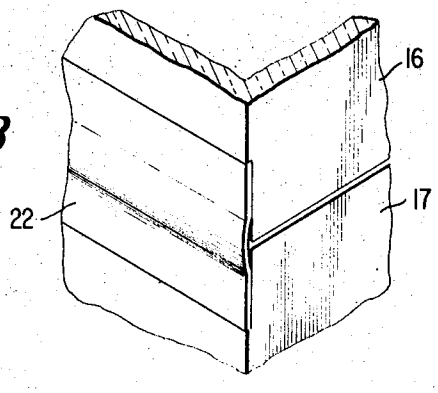


FIG. 8

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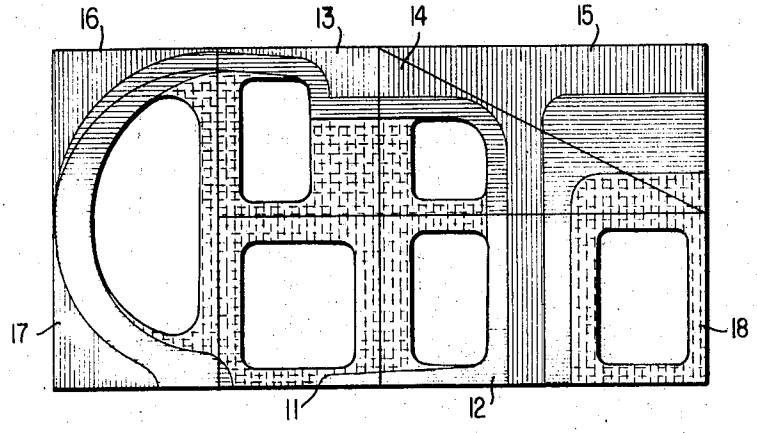


FIG. 9

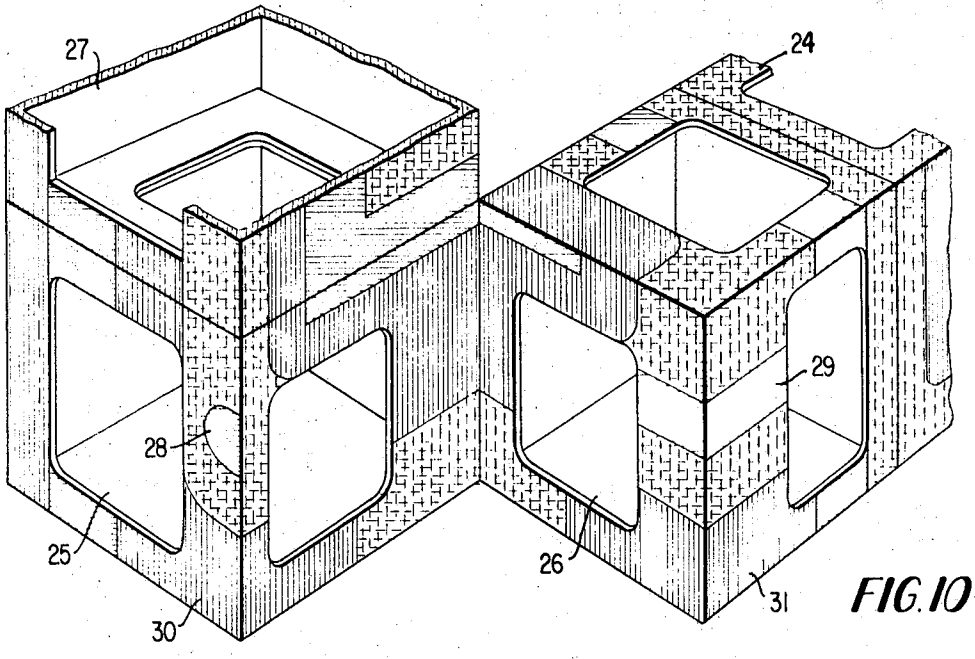


FIG. 10

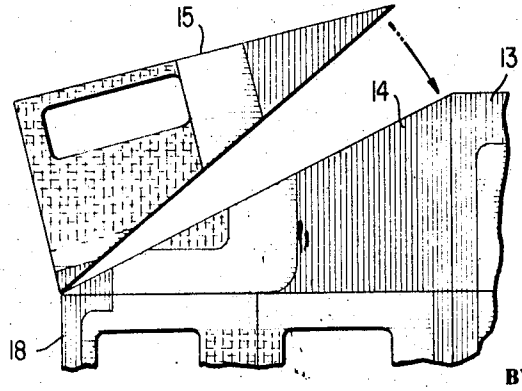


FIG. 11

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HINGED MODULAR PLAYGROUND BLOCK SYSTEM

This invention relates primarily to new and useful improvements in play and exercise apparatus for children and in particular to a module or block system comprising interconnected units adapted to be placed in a variety of positions and combinations suitable for playground use.

Children, even from the very young age of 5 or 6 months, have strong desires to climb, crawl, slide and jump and perform other exercises capable of developing their muscles and joints. Psychologists further have found that many children desire to crawl into and play within confined spaces. The children gradually progress to higher levels of climbing ability and as the advance in age, become more adventuresome and are willing to slide down and jump from higher and steeper surfaces. It has been found that such play serves to develop the muscular ability and also to develop coordination between the various parts of the body and additionally to provide long hours of recreation.

With conventional playground equipment, children frequently tire of the various combinations of tricks and stunts that can be performed on a given piece of equipment. Unless a playground is exceptionally well equipped, the child frequently loses interest in such exercise.

Accordingly, it is an object of the present invention to provide play and exercise equipment for children which can be moved and modified into various configurations.

Another object is to satisfy a child's basic desire to enter and leave confined spaces and to jump, slide, and perform other feats in order to develop the muscles.

A further object of the invention is to provide module playground equipment comprising a plurality of interconnected play structures that may be arranged into a small compact unit which may be stored in a relatively small area.

A yet further object of the present invention is to provide a plurality of hollow modular play blocks having egress openings therein which can be combined with other similar units to provide an endless passageway for crawling and exploration by children.

It is another object of the invention to provide play and exercise equipment adaptable for use either indoors or outdoors which includes a plurality of units that can be used with respect to each other to provide a fairly low level arrangement or a higher elevated configuration for use by children of various ages and sizes.

A further object of the present invention is to provide a modular playground system including a plurality of individual modules adapted in one position of use to form generally rectangular or cubic units, but which may be rearranged to form various concave and convex surfaces for sliding purposes.

Another object of this invention is to provide a playground block system wherein each individual block has color-coded indicia thereon to indicate to the user various modes of positioning of the blocks with respect to each other to form play units.

Another object of the present invention is to provide a playground block system which is of sturdy construction, has a relatively small number of parts, is economical to manufacture and use, and is safe in use and relatively compact for storage.

For still further objects and for a better understanding of the invention, reference may be had to the following detailed description taken in conjunction with the following drawings which illustrate the best mode now contemplated in carrying out the invention and in which:

FIG. 1 is a perspective view of the playground block system in its basic unextended form;

FIG. 2 is a perspective view of the system showing a portion thereof swung into the extended position as indicated by the solid arrow in FIG. 1;

FIG. 3 is a perspective view showing further manipulation of the elements in the manner shown by the three arrows in FIG. 2;

FIG. 4 is a perspective showing further progression of the units pivoted in the manner designated by the solid arrows in FIG. 2;

FIG. 5 is yet a further perspective showing additional progressions of movement following the arrows of FIG. 4;

FIG. 6 yet is another perspective showing continuation of movement of the modular sections following the movement of the arrows in FIG. 5;

FIG. 7 is an enlarged fragmentary perspective of a preferred form of hinge construction;

FIG. 8 is an enlarged fragmentary perspective showing a modified form of hinge arrangement;

FIG. 9 is a side elevation taken from the front of FIG. 2 and showing colored indicia portions for guidance;

FIG. 10 is a fragmentary perspective showing the use of the colored indicia for assembly; and

FIG. 11 is a fragmentary side elevation also showing the use of the color indicia for assembly.

Reference is now made specifically to the drawings wherein like reference numerals designate similar parts throughout the several views and wherein a typical installation of the assembly of this invention is shown in FIG. 1.

The playground assembly consists of a plurality of individual block modules of the various shapes designated 11, 12, 13, 14, 15, 16, 17 and 18. As can be seen in FIG. 1, the individual modules are pivotally connected together in such a manner that the individual modules can be arranged into a very compact cubic configuration forming in essence a large block. By way of example, modules 11 and 12 are of similar external configuration and may be nearly cubical in shape. It has been found that a particularly satisfactory size for most purposes is 30 inches wide, 30 inches high, and 30 inches in depth. Similar blocks 13 and 18 are also provided, all preferably of the same general external size.

Each block is preferably hollow in the interior and provided with at least one egress opening as shown at 23 in FIG. 3. By providing two or more openings in each block of convenient size, through passageways are thereby provided to adjacent modules to enable the child to climb in and out of connecting units. It has been found that a passageway having a minimum width of 13 inches is preferable, and with a height of 21 inches or 24 inches. In the preferred form of the invention shown in the drawing, openings 23 are provided with rounded corners to prevent snagging of the clothing and other injury.

Block modules 14 and 15 are in the form of right triangles in vertical cross section as best seen in FIGS. 2 and 11. These modules are adapted to be swung about a hinge so that the hypotenuse of each triangle will overlie the other in the closed storage position providing in effect a rectangular solid construction seen in FIGS. 1 and 2. It should be noted from FIGS. 3 and 11 that the blocks 14 and 15 are hinged along one edge so that block 15 may be swung upwardly to assume the position shown in FIG. 3 whereby the hypotenuse faces provide a continuous slanting surface and serve as a sliding board or ramp. See FIG. 3.

Another variety of sliding or climbing surface is provided by the block modules 16 and 17. When these modules are swung to the closed position shown in FIG. 2, the same provide an upright rectangular solid. However, when the upper module 16 is pivoted on the hinge H in the manner shown in FIGS. 2 and 3, a concave-convex surface is provided which can be used either for sliding or climbing. In the module 17, an opening is provided having a curved edge for the sake of variety.

Each of the block modules 11—18 is hingedly connected to one adjacent module by means of a hinge construction which may take several forms. In the preferred embodiment shown in FIGS. 1—6, the hinge is in the form of a conventional recessed piano hinge shown in detail in FIG. 7. Here the adjacent block modules 16 and 17 each have connected thereto one leaf of the hinge arrangement 19 and 20. A hinge pin 21 passes through the interleaved hinge sections in a manner well known in the art. It will be understood that the hinge surface is recessed into the face of the panel so as to provide a flush

outer surface which is adaptable for sliding and climbing without snagging on clothing and causing injury.

An alternative form of hinge **22** is shown at FIG. **8** and is known in the art as an integral plastic hinge. This particular hinge is a one piece plastic strip which may be either extruded or otherwise formed and is flexible and strong and will not crack or break even after thousands of pivotal movements. Once again, the panel portions of the modules **16** and **17** are cut out or recessed and the hinge is applied either by conventional adhesives or the same may be laminated into place so as to provide an integral appearance.

Each of the block portions as aforenoted is hollow and may be cast or molded of any conventional yet sturdy material. It has been found that fiberglass is an ideal material for this purpose since the same is readily available, and may be molded and finished into various shapes with ease and utilizing existing equipment. Of course, if desired, the modules can be formed of sheet metal or other substitutes. It is important in most installations that while the modules be strong, they be light enough to be readily moved into different configurations by a small child.

In order that a young child may readily move the various block modules into preselected positions of use, the sides of the modules may be painted with a color indicia instructional aid as more clearly shown in FIGS. **9—11**. FIG. **9** shows the module arrangement of FIG. **2** with various color coded indicia applied thereto that serves both a decorative function and also provides continuous colored portions on adjacent panels which when placed in juxtaposition create a continuous pattern. Movement of any one of the modules out of the preselected position will be readily apparent as the design will not be continuous and the user will then know that one of the preselected arrangements is not in exact alignment.

Referring to FIG. **10**, block modules **24**, **25**, **26** and **27** are depicted. Each side of the block modules is provided with a colored indicia as indicated for example at **28** and **30** on module **25** and at **29** and **31** on module **26**. When the modules **25** and **26** are pivoted with respect to each other, the colored portions **30** and **31** will abut and present a continuous pattern and further the colored portion **28** will align with the colored portion **29** on the module **26** to provide a continuous line indicia showing that the blocks are in proper relationship.

While I have described my invention with particular reference to the drawings, it is to be understood that various modifications and substitutions of equivalents will present themselves to one skilled in the art bearing the above noted objects of invention in mind.

I claim:

1. A modular playground block system comprising at least three hollow block modules, at least two of said modules having means to permit ingress and egress of a child and being of sufficient interior size to receive a child completely within the confines thereof, means hingedly connecting each module to a single other module, at least one of said hinge means being horizontally disposed and at least one of said hinge means being vertically disposed.

2. A modular playground block system as defined in claim **1**, wherein each of said hollow modules has two egress openings, wherein alignment of openings in adjacent block modules provides a connecting passageway.

3. A modular playground block system as defined in claim **1** wherein at least two of said block modules are rectangular solids.

4. A modular playground block system as defined in claim **1**, wherein at least two of said block modules are right triangular prisms adapted to normally overlie each other with their longest planar faces in contact.

5. A modular playground block system as defined in claim **1**, wherein one of said block modules has a concave face and another of said modules has a convex face, said faces being adapted to interfit in one position of use.

6. A modular playground block system as defined in claim **1**, and further including color coded indicia on the faces of each block module, said indicia of adjacent faces on different modules forming a continuous design pattern when said modules are moved into a given arrangement.