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3,518,787

BUILDING BLOCKS WITH MEANS FOR LOOSELY CONNECTING SAME

Filed Dec. 22, 1967

2 Sheets-Sheet 1

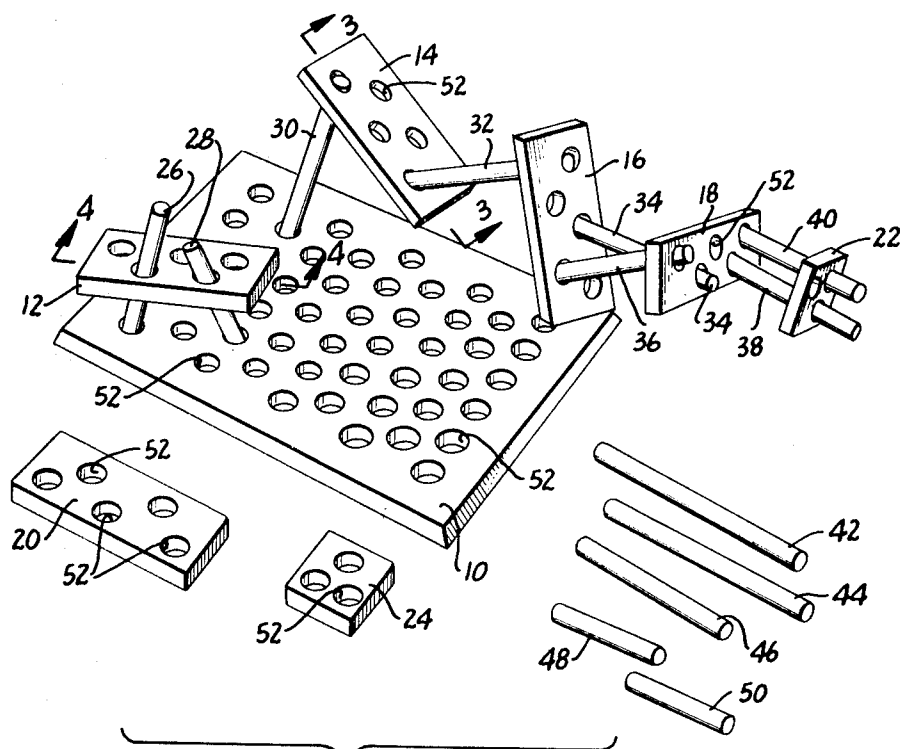


FIG. 1.

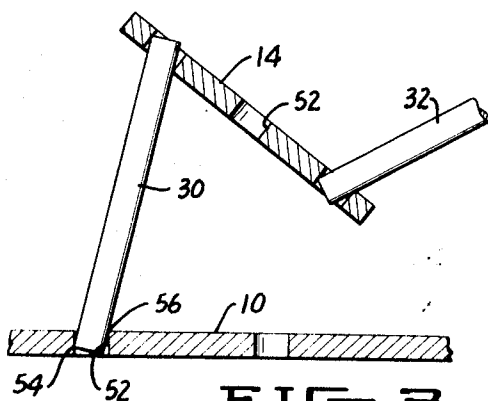


FIG. 3.

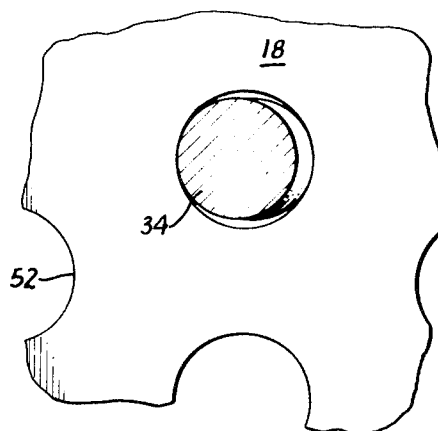


FIG. 2

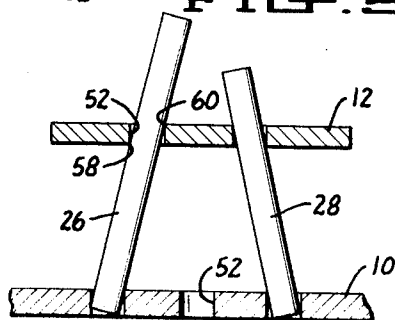


FIG. 4.

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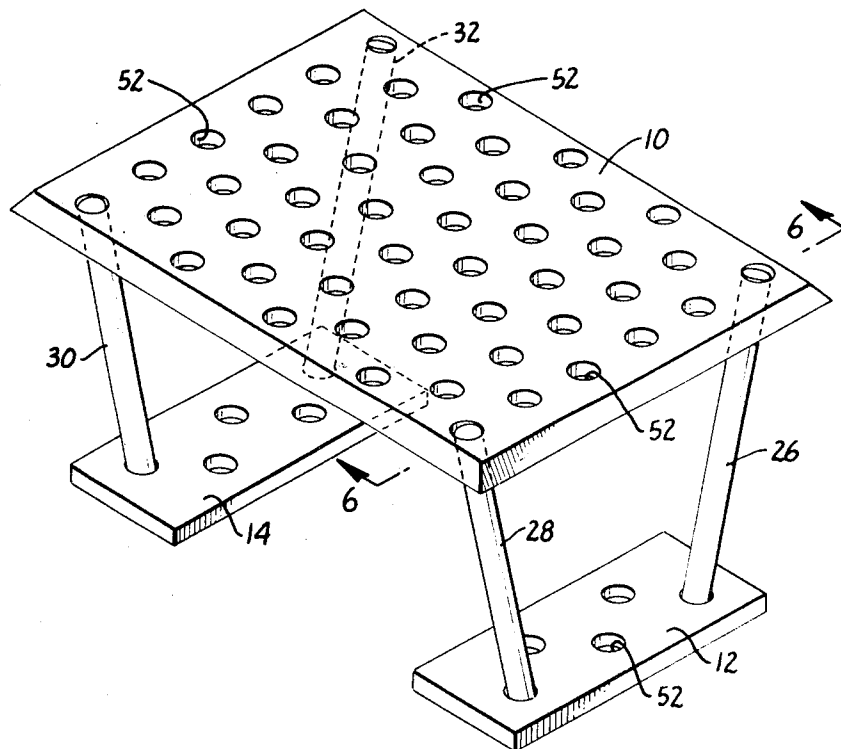


FIG. 5.

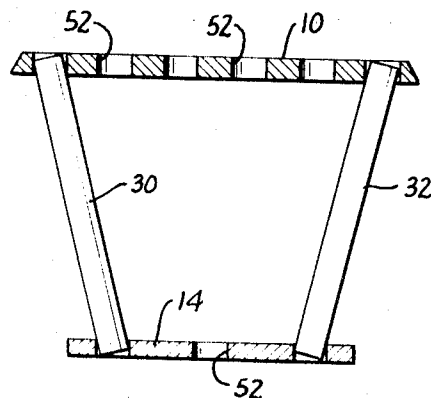


FIG. 6.

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BUILDING BLOCKS WITH MEANS FOR LOOSELY CONNECTING SAME

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Int. Cl. A63h 33/10

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4 Claims

ABSTRACT OF THE DISCLOSURE

A building toy composed of interfitable and connectable rod and body parts, the body parts having holes which are somewhat oversized in transverse dimension in relation to the transverse dimension of the rods, the rod parts being connectable to the body parts and being maintained in such connected relation under the influence of frictional and gravity forces.

This invention relates to a building toy and more particularly to a new form of building blocks.

Conventional sets of building blocks such as rectangular blocks, log-cabin blocks, and the like have many advantages as toys. They employ a relatively small number of different kinds of parts and do not employ special connectors so that they may be made easily and inexpensively, and they offer wide freedom in selecting the manner in which individual elements may be assembled. Additionally, they have proven to be intriguing to children and educational to the extent that they teach children some of the basic principles of balance, columnar building, and the like. In accordance with this invention we have provided a new building toy having the basic advantages of low cost, design freedom, and intrigue typical to building blocks. Additionally, the new toy operates upon a different principle for connecting elements together, and by reason of this new principle offers further advantages in stimulating the child's development of esthetic concepts of free form design and structural concepts of force interaction.

Other features and advantages of the invention will become apparent from the following description read in conjunction with the attached drawing in which:

FIG. 1 is a perspective view of a set of building blocks forming one form of the building toy of this invention;

FIG. 2 is a fragmentary view of a typical small portion of the toy of FIG. 1 taken along the plane of one of the bodies in FIG. 1 and showing one of the rods in FIG. 1 in cross section;

FIG. 3 is a fragmentary sectional view of a portion of the toy of FIG. 1 taken along the plane indicated at 3-3 in FIG. 1;

FIG. 4 is a sectional view of a portion of the toy of FIG. 1 taken along the plane indicated at 4-4 in FIG. 1;

FIG. 5 is a perspective view of certain of the elements shown in FIG. 1 connected together in a different arrangement from the arrangement shown in FIG. 1; and

FIG. 6 is a sectional view of the toy of FIG. 5 taken along the plane indicated at 6-6 in FIG. 5.

Referring now in detail to the drawing, the toy of this invention includes a plurality of bodies 10, 12, 14, 16, 18, 20, 22, and 24, and a plurality of rods 26, 28, 30, 32, 34, 36, 38, 40, 42, 44, 46, 48, and 50. The bodies 10-24 each contain a plurality of parallel holes 52 which have an interior dimension sufficiently larger than the exterior dimension of the rods 26-50 that the rods may be loosely received in the holes when the axes of the holes and

rods are aligned with each other. The invention provides a base means as at 10, FIG. 1 or 14, FIG. 5, for engaging a support surface and simultaneously supporting the remainder of the construction vertically thereabove.

While the rods may be loosely received in the holes, the rods form connecting links between a multiplicity of the bodies 10-24. Where one of the rods, for instance rod 30 in FIG. 3 is inserted into one of the holes 52 in the body 10 and inclined to the axis of the hole, the rod 30 engages the body 10 at two loci 54 and 56 which are positioned on opposite sides of the rod 30 and spaced apart longitudinally of the rod 30. The forces interacting between the body 10 and rod 30 at the two loci 54 and 56 provide a force couple which effectively lock the rod and body together. As illustrated in FIG. 3, one of the two places, or loci, of engagement 54 and 56 between the body 10 and rod 30 may be located exactly at the end of the rod 30, but, as illustrated in FIG. 4, a rod, such as rod 26, and a body, such as body 12, may be interlocked at a hole 52 where the rod and body engage each other at a pair of loci 58 and 60 both of which are located between the ends of the rod.

As illustrated in FIG. 1, the elements of our building toy may be assembled together in a wide variety of ways to yield unusual free form shapes. At the same time, each time a new element is placed onto the building toy it assumes a position which is governed by the location of the two places of support where a rod and body engage each other and which is also governed by the action of gravity on the element. Because of these things, a child building an object with our toy utilizes the structural and operational features of the toy each time it adds a new element to the object.

The arrangement illustrated in FIGS. 5 and 6 illustrates one of the wide variety of shapes which may be produced by rearranging the elements of the toy. In the form of the invention illustrated in FIGS. 5 and 6, the body 10 is supported on top of two of the bodies 12 and 14 by four of the rods 26, 28, 30, and 32. So supported, body 10 may serve as a table top or seat.

The dimensions of the bodies and rods and the shapes of the bodies which form this invention may be changed to some considerable extent, but we have found that the toy may be satisfactorily constructed with parts having the following dimensions: the body 10 is approximately 16 inches long, 12 inches wide, and approximately $\frac{3}{4}$ of an inch thick. The bodies 12-20 are $8\frac{1}{2}$ inches long, $3\frac{1}{2}$ inches wide, and approximately $\frac{1}{2}$ inch thick. The rods 26-50 are $\frac{3}{4}$ of an inch in diameter and vary in length from 4 to 10 inches, and the holes 52 in the bodies 10-24 are 1 inch in diameter. Wood is a preferred material for the various parts of the toy.

While one specific embodiment of the invention has been illustrated and described in detail herein, it is obvious that many modifications thereof may be made without departing from the spirit and scope of the invention. For example, the holes formed in the body members may have shapes other than circular, e.g. they may be square, oblong or rectangular, triangular, elliptical, have five or more sides, etc. and the rods may be provided with an equally diverse variety of cross-sectional shapes other than circular, the important criteria being that the holes in the body members be slightly oversized so as to be able to receive the rods, and that the rods engage the body members at two or more loci depending upon the selected cross-sectional shapes for the rods and the holes of the body members.

What is claimed is:

1. A building toy comprising:

(A) a plurality of relatively inflexible bodies having

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a substantial thickness relative to their width and breadth dimensions,

(1) each body having a plurality of holes extending entirely therethrough generally parallel to each other, said holes having an interior transverse dimension,

(2) a first one of said bodies being spaced away from a second one of said bodies, said first and second bodies together having a pair of holes which holes are generally directed toward each other,

(B) a plurality of elongated rods separate and apart from said bodies, each rod having a pair of oppositely disposed end portions which are substantially identical in size and shape and which have an exterior transverse dimension less than said interior transverse dimension of said holes in said bodies, whereby said rods may be loosely received in said holes,

(C) one of said rods extending between said first and second bodies, with a portion thereof received in each hole of said pair, and engaging each of said first and second bodies at and only at, two loci which are spaced longitudinally along said rod from each other and which are laterally offset from each other with respect to the periphery of the cross-sectional shape of said rod,

(D) at least one of said bodies constituting base means for engaging a support surface in stable supported relation thereto and, simultaneously, for supporting in its said holes a plurality of said rods in positions extending generally vertically of said support surface.

2. The building toy of claim 1 wherein:

said first and second bodies together having a second pair of said holes extending generally toward each other; and

a second one of said rods extends between said first and second bodies with a portion thereof received

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in each hole of said second pair and engaging each of said first and second bodies at at least two loci which are spaced longitudinally along said rod from each other and which are laterally offset from each other with respect to the periphery of the cross-sectional shape of said second rod.

3. The building toy of claim 1, each of said bodies having a pair of oppositely disposed parallel faces which are generally perpendicular to the axes of the holes in said body.

4. The building toy of claim 1, further including: at least an additional one of said rods, having portions thereof received in a further hole of one of said first and second bodies and in a hole of an additional body, engaging said one and additional bodies at at least two loci which are spaced longitudinally along said additional rod from each other and which are laterally offset from each other with respect to the periphery of the cross-sectional shapes of said rods, all of said rods thereby interconnecting said one and additional bodies into a three dimensional arrangement.

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F. BARRY SHAY, Primary Examiner

U.S. Cl. X.R.

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