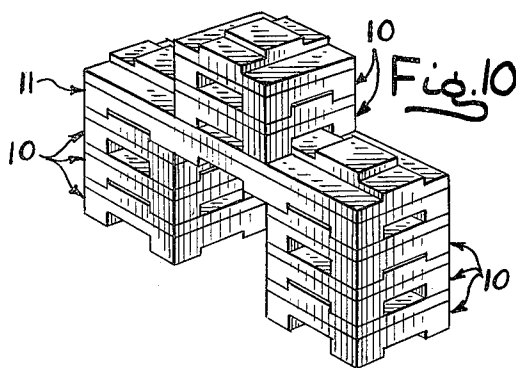
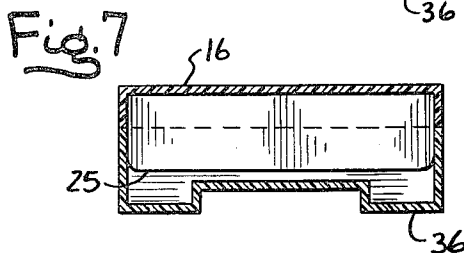
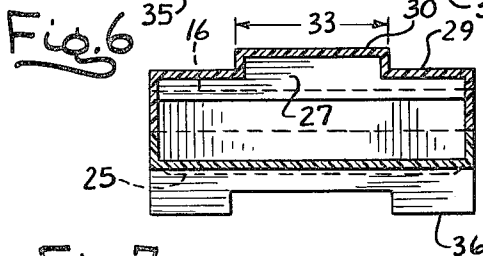
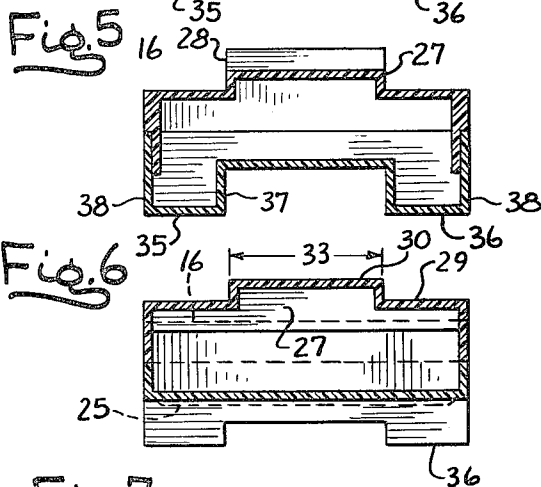
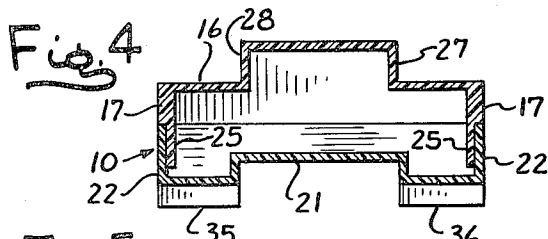
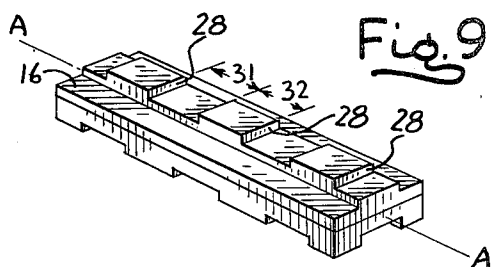
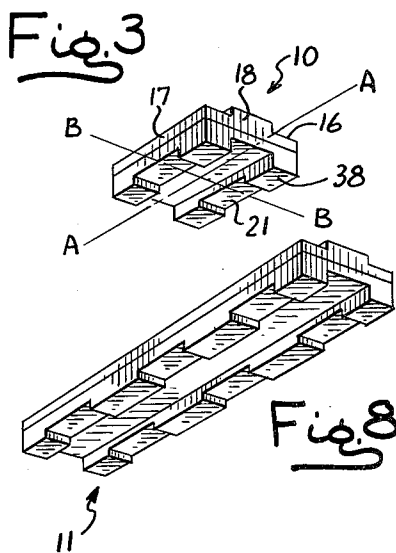
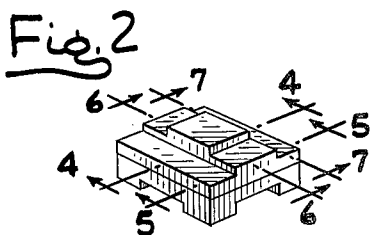
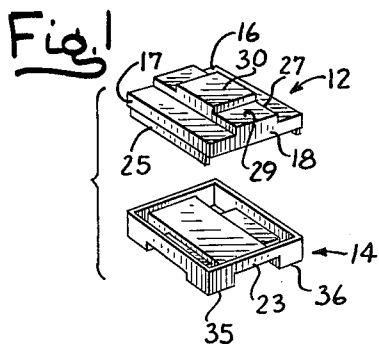


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S. G. GOSS III
BUILDING BLOCKS CONNECTABLE IN SLIDEABLE
OR NON-SLIDEABLE RELATIONSHIP
Filed July 2, 1962

3,220,141



INVENTOR
SAMUEL G. GOSS III

BY

Wolfe, Hubbard, Voit & Osann
ATTYS.

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3,220,141

BUILDING BLOCKS CONNECTABLE IN SLIDE- ABLE OR NON-SLIDEABLE RELATIONSHIP

Samuel G. Goss III, Lake Forest, Ill., assignor to Halsam
Products Company, Chicago, Ill., a corporation of
Illinois

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The present invention relates generally to children's toys and, more particularly, to a set of improved construction blocks with which the users of all ages may build numerous entertaining configurations.

It is an object of the present invention to provide a toy which is more interesting and fun than conventional building blocks.

It is another object of the present invention to provide a set of improved blocks of rugged plastic construction which may be easily and quickly assembled, with only a minimum of manual dexterity, into a wide variety of entertaining forms.

It is a further object to provide an improved set of building blocks which practically fall together, while providing sufficient engagement to prevent relative sliding movement without the necessity of special locking structures.

It is a related object to provide such a set wherein the pieces are interfitted without pressing or otherwise interlocking them and, accordingly, any piece or combination thereof may be quickly rearranged to form other configurations by simply separating them and reassembling them in the desired fashion.

It is still another object to provide an improved set of mating pieces of the type described which are exceptionally economical from the standpoint of manufacturing, in that each piece is formed in hollow sections and assembled prior to use, therefore permitting use of less expensive fabrication procedures and effecting a saving in material costs, while at the same time providing a toy which will withstand the rough usage which will be expected of it.

The invention consists of the novel constructions, arrangements, and devices to be hereinafter described and claimed for carrying out the above-stated objects and such other objects as will be apparent from the following description of an exemplary form of the invention illustrated with respect to the accompanying drawings, wherein:

FIGURE 1 is a perspective of an exemplary assembly embodying the present invention, shown in a disassembled state;

FIG. 2 is a perspective of FIG. 1 assembled into a usable piece which constitutes one of a set of such pieces;

FIG. 3 is a perspective view of the FIG. 1 assembly taken from an angle which more clearly illustrates its lower face;

FIG. 4 is a section viewed along line 4—4 of FIG. 2;

FIG. 5 is a section viewed along line 5—5 of FIG. 2;

FIG. 6 is a section viewed along line 6—6 of FIG. 2;

FIG. 7 is a section viewed along line 7—7 of FIG. 2;

FIGS. 8 and 9 are perspective views showing the construction of an assembly which is dimensionally longer than that of FIG. 1, and which would be included in a set of pieces of complementary construction; and

FIG. 10 illustrates one manner in which pieces, such as those indicated in FIGS. 1 and 8, may be assembled.

While the invention is susceptible of various modifications and alternative constructions, certain illustrative embodiments have been shown in the drawings and will be described below in considerable detail. It should be understood, however, that there is no intention to limit the invention to the specific forms disclosed, but, on the contrary, the intention is to cover all modifications, alterna-

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tive constructions, and equivalents falling within the spirit and scope of the invention as expressed in the appended claims.

Referring to the drawings wherein the invention is shown in its preferred form embodied in modular blocks, such as those indicated at 10 and 11, such blocks would be included in and sold as a group or set comprising anywhere from 27 to over 100 pieces. Block 10 differs dimensionally from block 11 in its length only, and it is contemplated that pieces of varying length would also be included in the set—although only two such pieces are here shown. A typical block is rectangular and has a major or longitudinal axis A—A and a minor or transverse axis B—B at 90° to the major axis, and each is generally symmetrical in the plane of its axes.

In keeping with one aspect of the invention, each piece is constructed of a pair of rugged plastic cuplike "halves" or members which, for convenience of description, may be referred to as the male member 12 and the female member 14. Each member is conveniently constructed of plastic formed to present a face having perpendicular peripheral sidewalls, thereby providing a hollow structure having a relatively uniform wall thickness which may be varied to provide necessary strength. The male member 12 has a face 16 with a depending skirt composed of peripherally disposed sidewalls 17 along the longitudinal sides thereof, and end wall members 18 at the ends. Similarly, the female member 14 has a face 21 flanked by perpendicular wall members 22 along its longitudinal edges, and members 23 at its ends. Each longitudinal wall member 17 on the male half 12 is provided with a tongue 25 formed as a part of the inner edge of the wall which projects downwardly therefrom. The tongues 25 are adapted to be received between the walls 22 of the female half 14 and are so dimensioned as to provide a gripping pressure on the inside of the walls 22 so as to hold the halves together, once assembled, to form a single hollow block, such as block 10 or 11, having faces 16 and 21 disposed on either side of the block. A set of blocks may be sold in a container and would comprise a convenient number of "halves" which would be assembled in the manner described to form a group of pieces prior to playing with them.

As will appear, each face is specially formed to provide the advantages enumerated above. The face 16, for example, is formed with an upstanding ridgelike projection 27 which is centrally disposed on the face and extends the length of the piece. The ridge is approximately half as wide as the face. The ridge itself is notched to a depth approximating half the height of the ridge. The notches are equally spaced and run transversely of the length of the ridge giving it the appearance of having a plurality of spaced raised portions 28 resembling truncated teeth similar to those found on a rack and pinion arrangement. Piece 10, as representative of the smaller pieces in a set, has only one projection 28, and the number of projections increases in proportion to increase in length, as will appear upon examining piece 11. The distance between adjacent projections (indicated as dimension 31), is conveniently greater than the dimension of a single projection (indicated at 32) along the same axis A—A.

The face 21 of the female half 14 is formed so as to be complementary with the face 16 in order that it may be interfitted with the face 16 of an associated block.

To this end, parallel ridges 35 and 36 project from the face 21. The ridges extend the length of the piece and are disposed on the periphery of the face flush with the depending sidewalls, and together define a channel 37. As in the case of the ridge 27, ridges 35 and 36 are notched, thus giving the appearance of having spaced toothlike projections 38 thereon. The projections on

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ridges 35 and 36 are parallel and equal in length to the length of the teeth 28 along the axis A—A, and are likewise laterally spaced a distance slightly greater than the width of the ridge 27 along axis B—B.

Each block 10 is dimensioned so as to be interfitted with like pieces in a variety of ways. Thus, the width of the central ridge, indicated at 33, is slightly less than the width of the channel 37, and the height of each of the ridges 27, 35, and 36 is the same.

The notches in the ridges 27, 35, and 36 each have a depth approximately equal to one-half the height of the ridges, and the width thereof is approximately the same as ridge 27. Thus, with each face having complementary dimensions, associated blocks may be placed in register with the axes A—A of the associated pieces either parallel or transverse, as indicated below.

In keeping with the invention, the pieces may be interfitted so as to permit or preclude relative motion, as desired. For instance, when the axes A—A of associated pieces are aligned, and face 16 is in sliding register with face 21 of an associated piece, the ridge 27 will slide in the space between ridges 35 and 36 and relative movement is achieved—permitting structures with movable as well as fixed parts. In a like manner, if the major axes A—A are transversely aligned, the teeth of the respective ridges will be in interfitting register so as to preclude relative movement and provide laterally rigid structure.

Thus, each piece is so constructed and dimensioned that it may be interfitted with associated pieces of a set merely by placing one upon the other so as to build or form structures like that shown in FIG. 10. In fact, the combinations of interesting configurations are limited only by the pieces available for use. It will be appreciated that there is no force of any kind, twisting, bending, inserting, latching, or interlocking, or other motion required to interfit associated pieces. Accordingly, only a minimum of manual dexterity is required to manipulate the pieces which virtually fall together to form any number of interesting configurations. As a result, a set of pieces formed in accordance with the invention may be played with by children of tender years, while still providing sufficient fascination to entertain older children.

I claim:

1. A set of hollow, plastic interfitting block-like pieces, each of said pieces being formed with a first face having a longitudinal ridge centrally disposed thereon, a second face opposite said first face on said piece, a pair of spaced longitudinal ridges thereon defining a channel with said second face, all of said ridges being transversely notched to a depth less than the height of said ridges, so that when two of said pieces are interfitted such that a first face of one piece and a second face of another piece are in ridge-in-channel register, relative horizontal movement therebetween is permitted and when said pieces are inter-

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fitted so that the ridge on said first face and said channel are placed in transverse register, relative movement between said pieces in any horizontal direction is precluded.

2. A set of modular, hollow, plastic toy blocks, each of said blocks comprising, in combination, detachably connected upper and lower portions defining upper and lower faces, the upper face having a central ridge extending the length thereof, said ridge being transversely notched to a depth less than the height of the said ridge at spaced intervals along its length, said lower face having a pair of spaced lateral ridges defining a central channel therebetween, the lateral ridges being transversely notched to a depth less than the height of said lateral ridges so that when another block of said set is placed in ridge-in-channel register with said block relative slidable movement in the horizontal plane is permitted and so that when said other block is placed in notch-in-notch register with said block relative sliding movement in the horizontal plane is precluded.

3. The combination of claim 2, wherein one of said portions includes tongues extending along opposed longitudinal edges thereof, the other of said portions having tongue-receiving recesses along its corresponding longitudinal edges to accommodate said tongues when the upper and lower portions are in register with one another, the side walls of said tongues snugly engaging the corresponding side walls of the registering recesses so that said portions remain in gripping engagement to permit handling as unitary block.

4. A pair of hollow, plastic blocks adapted to be interfitted to form both laterally rigid and movable combinations, one block of said pair having a face portion with parallel ridges on said face portion defining a channel running longitudinally of the block, the other block of said pair having a centrally disposed upstanding ridge extending longitudinally of the block and dimensioned to be received in said channel for relative sliding movement when the ridge and channel are interfitted in axial alignment, each of said ridges being formed with uniformly spaced transverse notches, said notches having a depth less than the height of said ridges so that ridge-in-channel register between said blocks permits relative slidable movement and notch-in-notch register of said blocks precludes relative sliding movement.

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DELBERT B. LOWE, *Primary Examiner.*