S. W. FINCH.

TOY BUILDING BLOCK.

APPLICATION FILED DEC. 8, 1909.

956,632. Patented May 3, 1910.

3 SHEETS—SHEET 1.

Fig. 1.

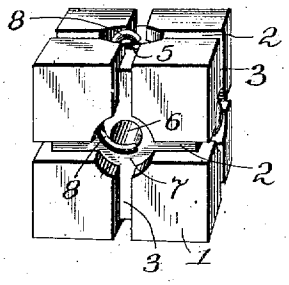


Fig. 2.

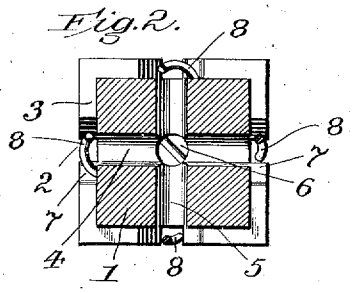


Fig. 8.

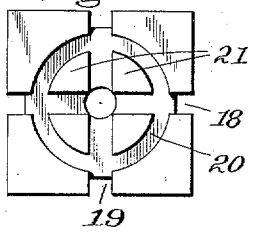


Fig. 3.

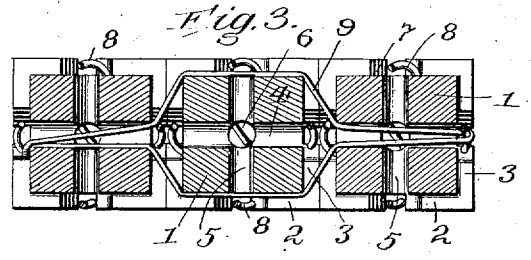


Fig. 4.

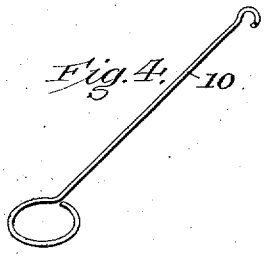


Fig. 5.

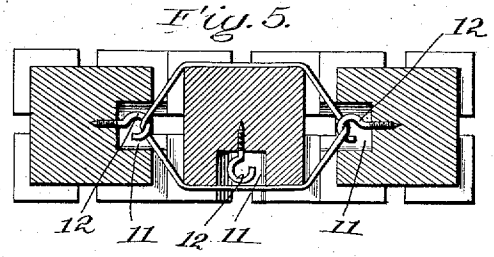


Fig. 6.

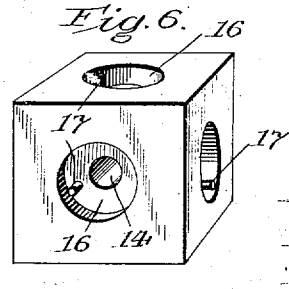
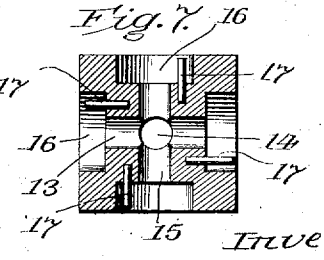


Fig. 7.



Witnesses:

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Attorneys

S. W. FINCH.

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3 SHEETS—SHEET 2.

Fig. 9.

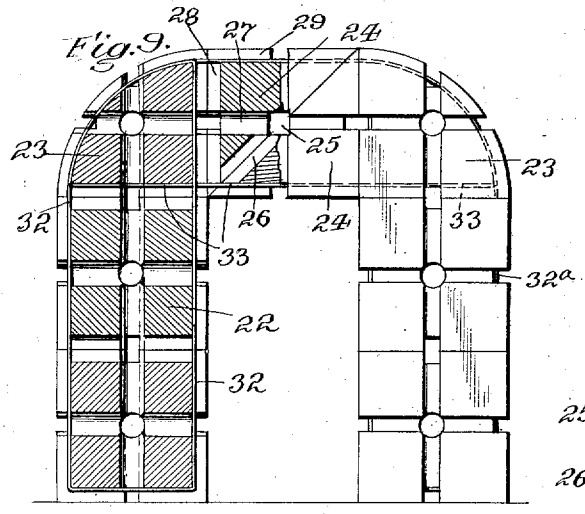


Fig. 11.

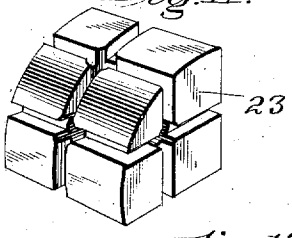


Fig. 12.

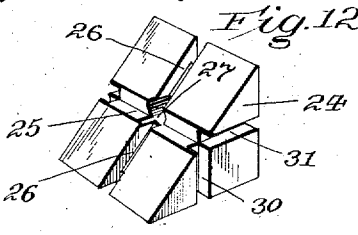


Fig. 10.

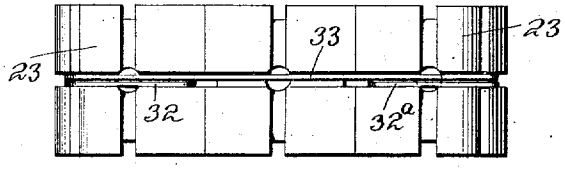


Fig. 13.

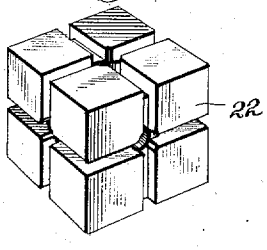


Fig. 14.

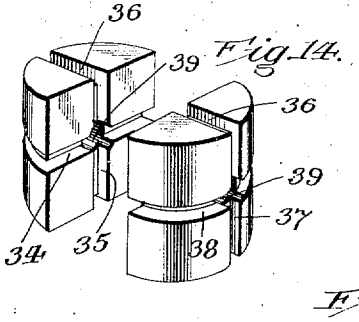


Fig. 15.

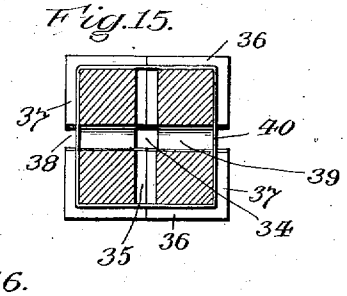
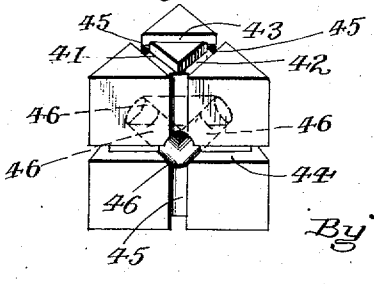


Fig. 16.



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3 SHEETS—SHEET 3.

Fig. 19.

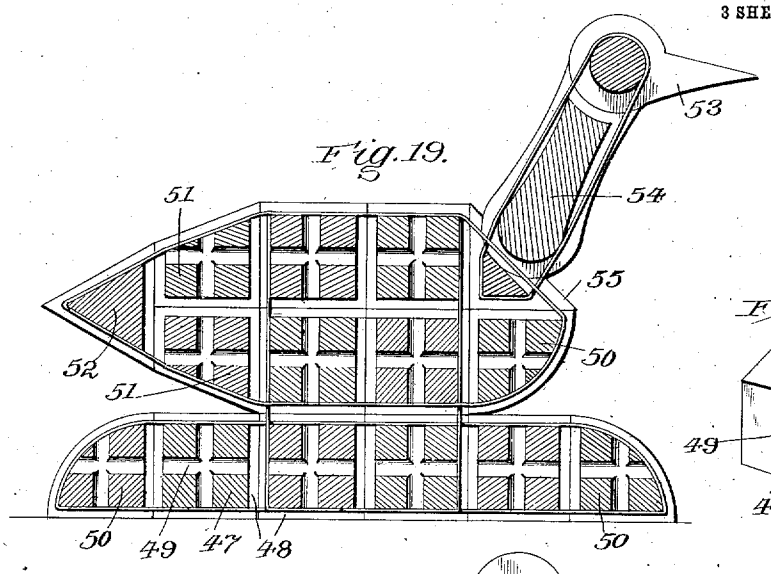


Fig. 17.

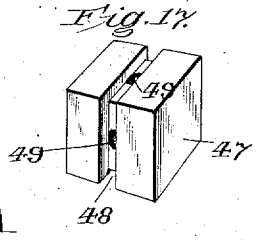


Fig. 18.

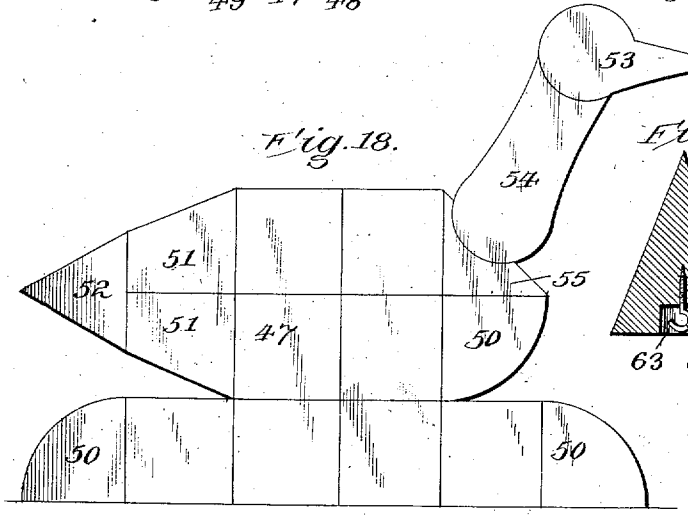


Fig. 22.

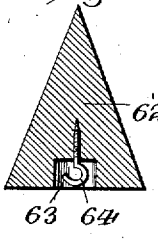


Fig. 20.

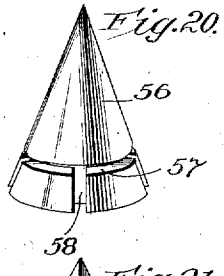


Fig. 21.

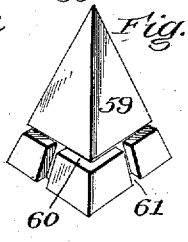


Fig. 23.

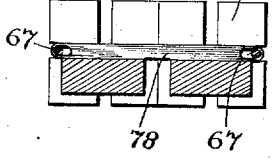


Fig. 24.

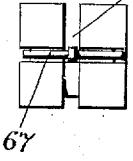


Fig. 25.

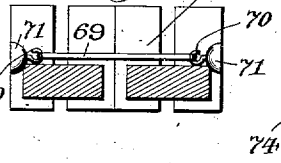


Fig. 26.

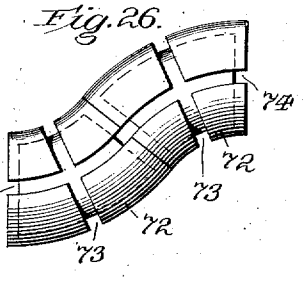
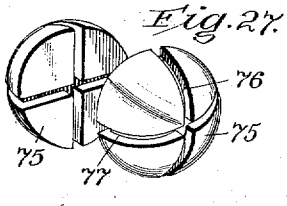


Fig. 27.



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UNITED STATES PATENT OFFICE.

STANLEY W. FINCH, OF WASHINGTON, DISTRICT OF COLUMBIA.

TOY BUILDING-BLOCK.

956,632. Specification of Letters Patent. Patented May 3, 1910.

Application filed December 8, 1909. Serial No. 532,122.

To all whom it may concern:

Be it known that I, STANLEY W. FINCH, a citizen of the United States, residing at Washington, in the District of Columbia, have invented certain new and useful Improvements in Toy Building-Blocks, of which the following is a specification.

My present invention pertains to an improved toy or, more specifically, to an improved toy building-block, combined with means for yieldingly holding a number of said blocks together in any desired formation or assemblage.

Blocks constructed in accordance with my invention may be of various forms, so long as they are provided with means permitting the attachment thereto of an elastic band such, for instance, as an ordinary rubber band, the band holding the blocks in assemblage and likewise permitting the introduction and retention of one or more additional blocks in the series. Thus, where two blocks are held together by a band, the construction is such that one or more blocks may be placed between the two, on the sides thereof, or at one or both ends of the series already built up. The preferred form of the block and one which has the widest range of use is provided with means whereby the band may be passed partly around the same, to secure attachment, or secured to one or another of a series of hooks or the like, one of such hooks being carried by the block adjacent to each side face thereof, but below the plane of such face. Such block will also be provided with three openings extending therethrough from side to side, the openings preferably coinciding in the center of the block. Such openings permit the threading of the band (or bands) through the block and the rotation of one block upon another.

The invention in some of its forms is illustrated in the annexed drawings, wherein:

Figure 1 is a perspective view of the preferred form of the block; Fig. 2 a transverse sectional view thereof; Fig. 3 a transverse sectional view of a series of such blocks assembled and held in place by a single elastic or rubber band; Fig. 4 a perspective view of a tool or hook-shaped member which may be employed to thread or draw the band through the holes in the block; Fig. 5 a sectional view of a series of blocks without the central openings and with means whereby the elastic may be attached to one face of the block without passing about the same in the external grooves or channels which are common to both this and the preceding forms; Figs. 6 and 7 perspective and sectional views, respectively, of a further form, in which the external grooves are absent; Fig. 8 a plan view of a still further form, wherein the hooks or pins are omitted, and anchoring studs or posts are formed as an integral portion of the block about which the band may be looped or passed; Fig. 9 a sectional elevation of an assemblage of blocks, the blocks being of a slightly different construction from those above referred to; Fig. 10 a top plan view of the assemblage shown in Fig. 9; Figs. 11, 12 and 13, perspective views of the blocks employed in building up the structure of Figs. 9 and 10; Fig. 14 a perspective view of two semicylindrical blocks; Fig. 15 a sectional view of such blocks brought together and held in such position by an elastic band; Fig. 16 a perspective view of a triangular block; Fig. 17 a similar view of a modified form of block, designed more particularly for use in the building up of figure work; Fig. 18 an outline figure of a duck, wherein the block shown in Fig. 17 is employed; Fig. 19 a vertical sectional view of Fig. 18; Figs. 20 and 21, perspective views of blocks of cone and pyramidal shapes, respectively; Fig. 22 a sectional view of a pointed block provided in its base with attaching means; Figs. 23 and 24 sectional and end elevations, respectively, showing means for attaching the elastic band; Fig. 25 a sectional view of two blocks illustrating a still further means of securing the band in position; Fig. 26 a side elevation of two sector-shaped blocks placed end to end; and Fig. 27 a perspective view of two semispherical blocks.

Referring first to the construction illustrated in Figs. 1 to 3, 1 denotes the body of the block, cubical in its general form and provided upon each face with cross slots or grooves 2 and 3. The block is also provided with three diametrally-disposed openings or holes 4, 5 and 6, which extend through the block, each preferably terminating in line with an enlarged opening or recess 7 formed at the point of crossing of the slots 2 and 3, and the end of the adjacent through opening. Extending into each of the recesses or openings 7 and over the ends of the cross openings or holes 4, 5 and 6, is a hook-shaped pin 8, said pin being driven

into the body of the block in a diagonal direction so as not to project into any of the holes or openings 4, 5 and 6. As will be readily appreciated, the blocks may be secured to each other by a rubber band or bands, three of such blocks being shown in contact with each other in Fig. 3 and held together by a rubber band 9. The band might pass entirely around the blocks, being seated in the slots 2 of all of the blocks and the outwardly-extending slots 3 in the end blocks. In order, however, to illustrate the possibilities of the device, the band is shown as passed through the openings 4 in the outermost blocks, said band engaging one pair of pins 8, as shown, the intermediate block being embraced by the band which enters the slots 2 in the upper and lower faces thereof. Should it be desired to attach a block to any one of the members of a series, a rubber band could be passed entirely about the series, or through any one of the openings; or attached to one of the hook-shaped pins 8 and passed around the block to be attached or through the holes or openings therein. Thus a series of blocks may have attached thereto one or more blocks without in any manner disturbing the first-assembled series. By having the band passed through a centrally-disposed opening, one block may be rotated with reference to the others, and in certain cases this is desirable; as, for instance, where the blocks are employed to build up a structure which will simulate an animal, bird, or the like.

A hook 10, Fig. 4, may be employed to thread the bands through the openings, the hook being formed of light wire. In fact, an ordinary wire hairpin may be used to draw the band through the block or blocks, as the case may be.

In Fig. 5 three blocks are illustrated, the blocks in this instance being without the intersecting openings or holes. Each block is, however, provided with a countersunk recess or depression 11, in which is secured a hook 12 which, as illustrated in the figure, enables the blocks to be readily secured to each other without the necessity of passing the band entirely around the block and, perhaps, unduly distending the band in case it should happen to be a short one.

In Figs. 6 and 7 a block is illustrated which is formed without the intersecting slots in its outer face, but is provided with intersecting holes, as 13, 14 and 15, the block having likewise countersunk recesses 16. Pins 17 are driven into the block, the outer end of each pin stopping short of the outer face of the block. It will be readily appreciated that the band or bands may be looped over the pins, passed through the openings and extended to another block for attachment thereto.

In Fig. 8 the block is shown as provided with intersecting cross-slots or grooves 18 and 19 upon each face thereof, the block being likewise provided with transverse internally-disposed intersecting openings or holes, as in the structure shown in Figs. 1 to 3. The cross-slots in this instance are interrupted or cut into by a circular slot 20 which forms a series of studs or posts 21, about which a band may be looped or hooked and then passed through one of the holes or openings.

In Figs. 9 to 13 inclusive there are shown a structure and a series of blocks employed in building up such structure. The block designated as 22 in Fig. 13 is of cubical form and of the same general shape as that shown in Figs. 1 to 3, except that it is not provided with hook-shaped pins and the enlarged opening or recess for receiving the same; in other words, it has the intersecting holes or openings passing through the block from each side thereof, and the intersecting slots or recesses formed in each side face. The corner blocks of the arch-shaped form illustrated in Figs. 9 and 10 are designated as 23, and one of such blocks is shown in detail in Fig. 11. It is substantially the same in its mechanical construction as the block shown in Fig. 13, but is rounded or curved upon one side. The center of the arch illustrated in Fig. 9 is formed of two blocks 24, one of which is shown in detail in Fig. 12, said blocks being triangular in cross-section. The block is provided upon its inclined face with cross-slots 25 and 26. An opening 27 is formed in the block, said opening standing at right angles to one of the right-angled faces of the block and consequently parallel with the other of such faces. Each of said faces is likewise provided with slots 28 and 29, respectively, which slots stand in alinement with the slot 26. The triangular faces are provided with short slots 30 and 31, which stand at right angles to each other, as clearly illustrated in Fig. 12. The blocks 22 and the block 23, as shown at the left in Fig. 9, are secured together by a band 32, and a similar band 32^a is employed to secure the corresponding blocks upon the opposite side. The central portion of the arch is formed of triangular blocks 24, said blocks being secured to each other and to the sector-shaped or rounded blocks 23 by a rubber band 33. The fact that the bands may be distended, permits their ready application to any block previously positioned, and insures said block coming back to place after the band has been passed around it, in case this method of attachment of the band be employed, as in Figs. 9 and 10.

Where it is designed to build up a column, or a figure having rounded or semicircular faces, blocks of the form shown in Fig. 14

will be employed. Said blocks are semi-cylindrical in outline, the vertical flat face of each block being provided with intersecting cross grooves 34 and 35, and the flat end faces with a single groove 36, which groove 36 coincides with the groove 35 and with a similar groove 37 formed in the outer or rounded face of the block. A groove 38 extends around the block, standing in alinement with the cross-groove 34 and with an opening 39 which passes horizontally through the block. Two such blocks are shown in section in Fig. 15, being held together by a band 40 which is seated in the grooves 36 and the vertically-disposed grooves 37.

In Fig. 16 a triangular block is illustrated, such block being of a form slightly different from that shown in Fig. 12. The block is equilateral and the end faces thereof are provided with slots 41, 42 and 43. A slot or groove 44 is formed about the block and a cross slot 45 is provided in each side face of said block, the cross-slots standing in alinement with openings 46 which extend through the block in a direction parallel to the respective sides. This construction permits the blocks to be readily positioned and the attaching band secured thereto without difficulty.

In Fig. 17 there is shown a block 47, cubical in form and provided with a continuous slot or channel 48 extending transversely around four of the outer faces of the block, said slot intersecting openings 49 passing through the block and terminating at the base of the slot. This form of block is especially adapted for the building-up of figures of animals and the like, in which it is desirable to have the outer faces flat or plane surfaces, so that they may be covered with paper or the like, simulating a particular animal or bird. By having the various blocks colored, a child may assemble the same in proper relative position, after the manner of the so-called cut-up pictures now in vogue.

The blocks 47 will, as will be seen upon an inspection of Figs. 18 and 19, form the main body portion of the duck or other figure, special blocks being provided to form the remainder thereof, such blocks comprising blocks 50 (one corner of which is cut away so as to form a curved face), two similarly formed blocks 51, and a triangular block 52, which together form the tail of the bird. The head is produced by the use of a specially formed block 53, while for the neck an elongated block 54 is employed. The upper end of said block 54 is concave, to receive the block 53, while the lower end of block 54 lies in a concavity formed in an adjacent triangular block 55. As will be seen upon reference to Fig. 19, rubber bands may be passed around the various blocks to hold them in their assembled position, and the neck and head may be shifted from one position to another with reference to the body and to each other, while the bands maintain them in their close-fitting relation. It is conceivable, of course, that a block with an opening therethrough may be used for the head and neck, and a securing band passed through such hole or opening, whereby the neck may be turned axially and the head likewise brought into any desired position.

In Fig. 20 a block 56 of conical form is disclosed, having a slot 57 extending entirely around the same, adjacent to the base, and a series of vertically-disposed slots 58 which extend from the base to the slot 57. In Fig. 21 a block 59 of pyramidal form is illustrated, such block having a slot 60 extending around the same near the base, and a series of slots 61 extending from the base to the slot 60. The slots in the blocks shown in Figs. 20 and 21 permit the securing of such blocks upon the top of columns, minarets or the like.

In Fig. 22 a cone-shaped block 62 is shown. Said block, instead of being provided with slots, as in the other figures just referred to, has formed in its base a recess 63 in which is housed a hook 64, such hook facilitating the connection of a band thereto in order that the parts may be secured in place.

Blocks of slightly modified form are illustrated in Figs. 23 and 24. In Fig. 23 two blocks of substantially cubical outline are shown as placed side to side, the blocks being provided with external slots, as in previous figures. One of the slots, however, as 65, extends downwardly into the block to a point slightly beyond the axis thereof. This permits the passage of a rubber band inwardly through the slot to a point in line with the center of the block, and said band may be secured in position by passing pins 67 therethrough and permitting such pins to come to rest in the slots in the ends of the blocks. These pins may be of special form, or pieces of tooth-pick or the like may be employed. Figs. 23 and 24 illustrate merely an additional manner in which the elastic bands may be secured in place.

A still further form is shown in Fig. 25, wherein two blocks are each provided with a deep slot or recess 68 which permits the positioning of the band 69 therein, in line with the axes of the blocks, the band in this instance being held in place by hooks 70, carried by buttons 71, which find their seats in similarly formed recesses or sockets provided in the ends of the blocks.

In Fig. 26 two blocks, 72, are illustrated, said blocks being circular in cross-section and of sector-shape in outline. The two blocks are similar in form, and each is provided with a slot 73 which passes entirely around the same, and with a longi-

tudinally-disposed slot 74 which likewise extends entirely around the block, intersecting the slot 73 at substantially right angles. This block permits the formation of a sinuous body which, as will be readily appreciated, is advantageous in making up outlines of animals or the like.

In Fig. 27 are illustrated two semispherical blocks 75, each block being provided with two continuous slots 76 and 77, the slots intersecting each other upon the curved face and also upon the flat face. These two blocks may be secured together by passing a band about the same, or one of the blocks may be used in building up any special figure.

Under all the forms it is to be noted that each block is provided with means for securing it to another block or to a series of blocks by an elastic band or a plurality of bands, as may be necessary.

The hook-shaped pins 8 shown in Figs. 1, 2 and 3, the pins 17 in Figs. 6 and 7, and the studs or posts 21 in Fig. 8, form what may be termed anchoring or attaching members, to which the rubber bands may be secured, said members being located, in each instance, adjacent to the opening passing through the block.

While in most of the figures I have illustrated an ordinary elastic band as the means for securing the parts together, it is not absolutely essential that such band be employed, though in practice it is thought that it will be exclusively used. In Fig. 23, for instance, a solid band 78 is shown, having openings in each end through which the pins 67 are passed.

Blocks of other forms than those shown may, of course, be employed, but as these will readily suggest themselves to those skilled in the art further illustration is deemed unnecessary.

While the internal holes or openings are shown as placed at right angles to each other, in most of the figures, it is to be understood that such arrangement or disposition is not essential, as the holes or openings may be placed at various angles. So, too, it is not essential that such holes or openings should intersect.

Having thus described my invention, what I claim is:

1. In combination, a plurality of toy building-blocks; an elastic band for holding said blocks together; and means for securing the band thereto.

2. In combination, a plurality of toy building-blocks; an elastic band for holding said blocks together; and means carried by the blocks for securing the band thereto.

3. In combination, a plurality of toy building-blocks; means carried by each block adjacent to the outer faces thereof for admitting of the attachment of an elastic band thereto; and an elastic band engaging such means and thereby securing the blocks in their desired position.

4. In combination, a plurality of toy building-blocks; an elastic band for holding said blocks together; and means for holding and securing the band in place in axial alinement with at least one of said blocks.

5. In combination, a plurality of toy building-blocks; an elastic band for holding said blocks together; and means located adjacent to the outer face of each of said blocks for attachment of the elastic band thereto, said means being located adjacent to the center of such faces.

6. As a new article of manufacture, a toy building-block provided with a plurality of openings extending therethrough; and means located adjacent to the terminal of at least one of the openings for the attachment of an elastic band.

7. As a new article of manufacture, a toy building-block provided with a plurality of openings extending therethrough; and a hook-shaped member overlying at least one of the openings.

8. As a new article of manufacture, a toy building-block provided upon each of its outer faces with a plurality of intersecting grooves, and a plurality of intersecting openings extending through the block and terminating in the grooves at their points of intersection.

9. As a new article of manufacture, a toy building-block provided upon each face with a series of intersecting grooves, the corresponding grooves of the various faces merging into each other and thereby forming a series of practically continuous grooves; a plurality of intersecting openings extending through the block from side to side, the openings terminating in the grooves; and a hook-shaped member overlying each end of each opening.

10. As a new article of manufacture, a toy building-block provided upon each face with two intersecting grooves, the corresponding grooves of the various faces merging into each other and thereby forming a series of continuous grooves, the block being likewise provided with a socket at each point of intersection of the grooves; a plurality of intersecting openings extending through the block, said openings terminating in the sockets; and a hook-shaped member overlying each end of each opening.

11. As a new article of manufacture, a toy building-block having a socket or recess formed in its face and a hook-shaped member lying within said socket or recess.

12. As a new article of manufacture, a toy building-block provided with an opening extending therethrough, and an anchoring member located adjacent to one end of said opening.

13. As a new article of manufacture, a toy building-block, provided with an opening extending therethrough, and an anchoring member located adjacent to the opening at one end thereof, said anchoring member lying below the plane of the outer face of the block.

14. As a new article of manufacture, a toy building-block provided with a groove or channel in its outer face; an opening extending through the block; and an anchoring device located adjacent to said opening.

15. As a new article of manufacture, a toy building-block provided with a groove extending around or about the same, the outer faces of the block being otherwise uniform and free of projections, and with an opening extending through the block.

16. As a new article of manufacture, a toy building-block provided with a groove extending around or about the same, and an opening extending through the block and terminating in the groove, the outer faces of the block being otherwise uniform or free of projections.

17. As a new article of manufacture, a toy building-block provided with a series of intersecting grooves extending around or about the same, the outer faces being otherwise uniform or free of projections, and a plurality of openings extending through the block.

18. As a new article of manufacture, a toy building-block having an opening therein, and means adjacent to such opening for fastening a band to the block.

19. As a new article of manufacture, a toy building-block having a hook-shaped member secured thereto, and lying wholly below the outer surface of the block.

20. As a new article of manufacture, a toy building-block having means for hooking a band thereto, said means lying wholly below the main outer face or surface of the block.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

STANLEY W. FINCH.

Witnesses:
HORACE A. DODGE,
FANNIE WISE.