W. A. GRUENBERG.

TOY BUILDING BLOCKS.

APPLICATION FILED MAR. 29, 1919.

1,436,710.

Patented Nov. 28, 1922.

2 SHEETS—SHEET 1.

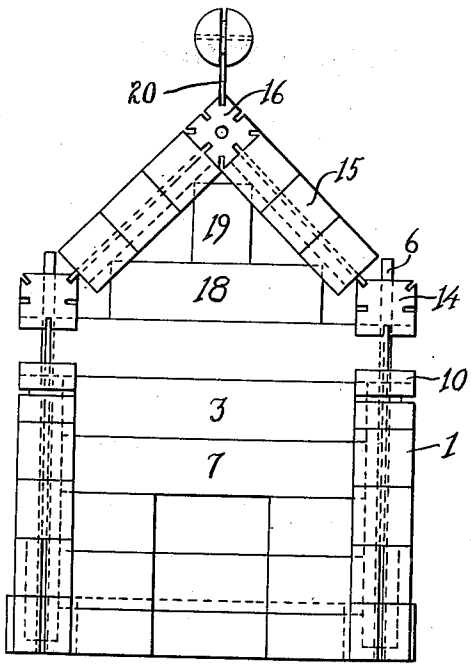

Fig. 1

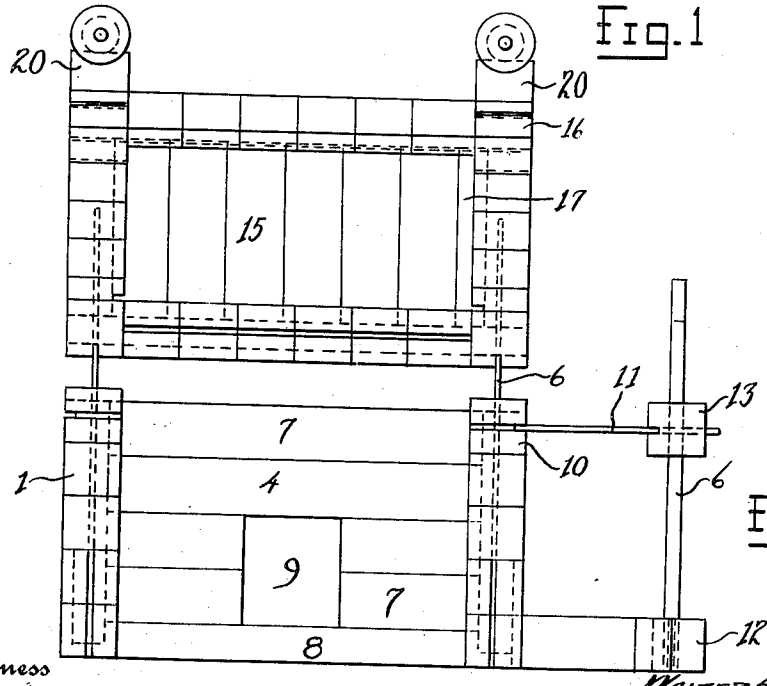

Fig. 2

Witness

Mary B. Hyde

Inventor

Walter A. Gruenberg

By

Charles E. Wilson

Attorney

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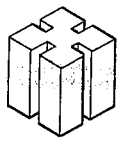

Fig. 3

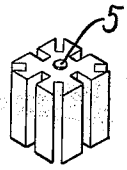

Fig. 4

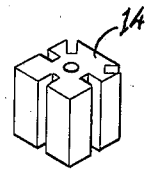

Fig. 5

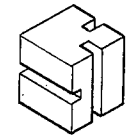

Fig. 6

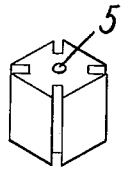

Fig. 7

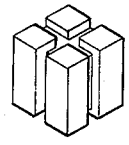

Fig. 8

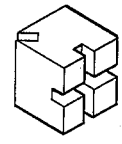

Fig. 9

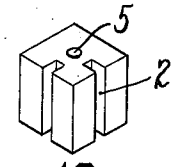

Fig. 10

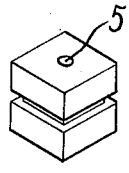

Fig. 11

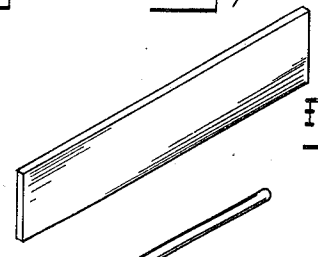

Fig. 12

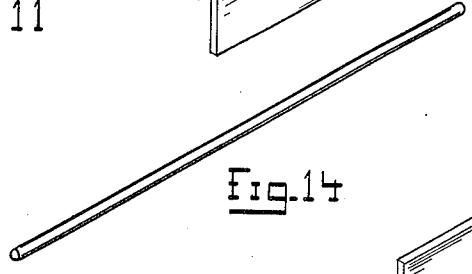

Fig. 14

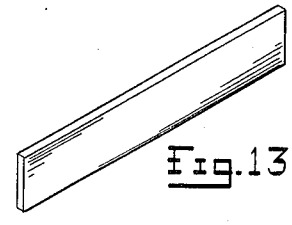

Fig. 13

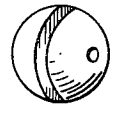

Fig. 15

Witness
Mary J. Hugill

Inventor
Walter A. Gruenberg

By Charles E. Wilson

Attorney

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UNITED STATES PATENT OFFICE.

WALTER A. GRUENBERG, OF DETROIT, MICHIGAN.

TOY BUILDING BLOCKS.

Application filed March 29, 1919. Serial No. 286,086.

To all whom it may concern:

Be it known that I, WALTER A. GRUENBERG, a citizen of the United States, residing at Detroit, county of Wayne, State of Michigan, have invented a certain new and useful Improvement in Toy Building Blocks, and declare the following to be a full, clear, and exact description of the same, such as will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

This invention relates to toy building blocks and the general object of the invention is to provide a set of blocks of various designs as for instance flat strips and cubes, rods, balls and the like, interchangeable and interfitting in a manner to enable them to be combined in a great variety of ways to form structures or devices simulative of buildings and structures of various characters. The particular feature of the invention is involved in the utilization of cubes, preferably of wood, having grooves formed in the faces thereof, the grooves in one face of the cube being some at an angle to and some parallel with the grooves in another face in the same cube, as hereinafter more fully described and a series of flat wooden strips of a width equal to the length of one of the cubes and additional strips less in width than the length of cube by which expedient, as is hereinafter shown, the parts are tied together in formation of a structure, whereby the same is made more substantial. A further object of the invention is involved in the use of the cubes having a central aperture extending therethrough whereby they may be strung on a rod to maintain the cubes in a stack without the necessity of the use of the interlocking members in addition thereto. These objects and the various novel features of the invention are hereinafter more fully described and shown in the accompanying drawings in which—

Fig. 1 is an elevation, showing the blocks assembled to form a structure similar to a house.

Fig. 2 is a side elevation of the same structure.

Figs. 3, 4, 5, 6, 7, 8, 9, 10, and 11 are details in perspective of the cubes.

Fig. 12 is a detail of one of the wide strips.

Fig. 13 is a view of one of the narrow strips.

Fig. 14 is a detail of a rod.

Fig. 15 is a detail in perspective of a grooved ball.

No attempt is here made to illustrate all the endless variety of cubes that may be utilized in this construction, as it is evident that blocks with the grooves formed in many ways not here shown may be used with the other elements. A sufficient number of blocks are here shown to illustrate the principle involved in the invention and it is to be here understood that more than one cube of the same type is provided in a set of these blocks.

The representation of the house in Figs. 1 and 2 illustrates generally the relationship of the several parts. The cubes are here used to form the corners of the structure, the blocks 1 for instance being the block shown in Fig. 10 having the parallel grooves in two adjacent faces and all the blocks used in the corners of the structure shown must be provided with these parallel grooves to receive the strips 3 on one side and the strips 4 at a right angle thereto on the other side shown in Fig. 2. Preferably all the cubes shown in the structure are provided with a central longitudinal aperture as indicated at 5 in Figs. 4, 7 and 10 and preferably a rod 6 extends through the entire series of cubes at each corner.

To tie the blocks together, however, and make a structure that is substantial, the strips shown in Figs. 12 and 13 and strips less in length but of the same character indicated at 7 in Figs. 1 and 2 are utilized. The narrower strip shown in Fig. 13 and indicated at 8 in Fig. 2 is placed in the grooves in the two bottom cubes of the corner posts on one side. This strip is less in width than the length of the cube but the succeeding strip, in this case a short strip 7 for the purpose of providing a window opening 9, is greater in width than the strip 8 and engages in a groove in the lower block of the corner and also a groove in the contiguous block. Thus the two blocks are tied together by the wider strip and the succeeding strips forming a side of the building engages similar groove in two blocks and the several separable elements are thus frictionally tied together as the strips are fit snugly in the grooves provided. Each side of the building is built up in like manner to the side described. If desired, cubes having grooves on another face, as for instance the block 10 illustrated in Fig. 6, may be utilized to re-

ceive the strip 11 at a right angle to the strips 4 as indicated in Fig. 2. By use of other blocks as for instance indicated at 12 and 13 in Fig. 2 and a rod 6, a structure similar to a porch may be added to one side of the building.

By having the cube grooved in the various ways suggested, some with grooves formed at the point of meeting of two faces of blocks as indicated in Fig. 5, the strips may be placed at an angle of 45 degrees to other strips. Such block in use is shown at 14 in Fig. 1. These blocks may be utilized in the structure here shown at the position ordinarily termed the eave of the building and roof boards indicated at 15 may be positioned in one of the grooves formed at the angle of the blocks 14. These strips at the upper end may be inserted in groove in blocks indicated at 16 and shown in perspective in Fig. 4. It is to be noted that the strips 15 are of a width equal to the length of the blocks, the strip 17 being narrower, whereby a wider strip engages a groove in contiguous blocks to tie the same together.

The gable ends are formed by a series of blocks similar to the blocks 1, having parallel grooves in adjacent faces as shown in Fig. 10 to receive the edge of one of the roof strips 15 and the shorter pieces 18 and 19 at a right angle thereto in the gable end.

The balls indicated in Fig. 15 have a circumferential slot or groove formed therein in which may be inserted a flat strip 20 which is also inserted in a groove in the block 16 and these flat strips 20, 7, 4, and 15 are made in various lengths as is desired, preferably a multiple of the length of a cube and several strips and cubes of each type are provided with a set of these blocks. The interlocking relationship of blocks may be fully understood from the foregoing description, particularly in the use of the narrower and wider strips which necessitates the engagement of one of the wide strips with more than one block or cube, and it is further to be understood that in making these blocks of wood, waste material may be utilized and the series of blocks made by which various types of structures may be simulated in an endless variety of ways. I do not however, wish to limit myself to wood as a material for these blocks, as any character of material may be utilized without departing from the spirit of this invention. It is further evident that the blocks may be of other shapes than rectangular in cross section, as for instance, triangular or polygonal, having the parallel sides provided with grooves of the character and function herein described.

Having thus fully described my invention what I claim is—

1. A set of separable toy construction blocks comprising a plurality of cubes of substantially equal size and having grooves formed in the several faces, some being provided with grooves at the meeting edge of the faces of the cube and some with grooves in one face at a right angle to the groove in another face, a series of flat strips, some narrow in width and some equal in width to the length of the cube, the strips being of various lengths and the use of narrow and wide strips causing the engagement of the wider strip in aligned grooves in contiguous blocks.

2. A set of separable toy construction blocks comprising a plurality of cubes of substantially equal size and having grooves formed therein, several cubes being provided with one or more grooves at the meeting edges of the adjacent faces of the cubes and some being provided with a groove in one face at a right angle to grooves in other faces and some provided with central apertures, a series of flat strips the ends of which are adapted to engage the grooves, some of the strips being narrow in width and some at least equal in width to the length of the cube, the strips on being assembled with the cubes and by use of narrow and wide strips causing engagement of the wide strips in aligned grooves in contiguous cubes, and rods on which the apertured blocks may be stacked, cooperating with the strips to tie the blocks together.

In testimony whereof, I sign this specification.

WALTER A. GRUENBERG.