D. M. WARD.

DETACHABLE CONNECTION FOR BUILDING BLOCKS.

APPLICATION FILED JUNE 3, 1913.

1,115,260.

Patented Oct. 27, 1914.

2 SHEETS—SHEET 1.

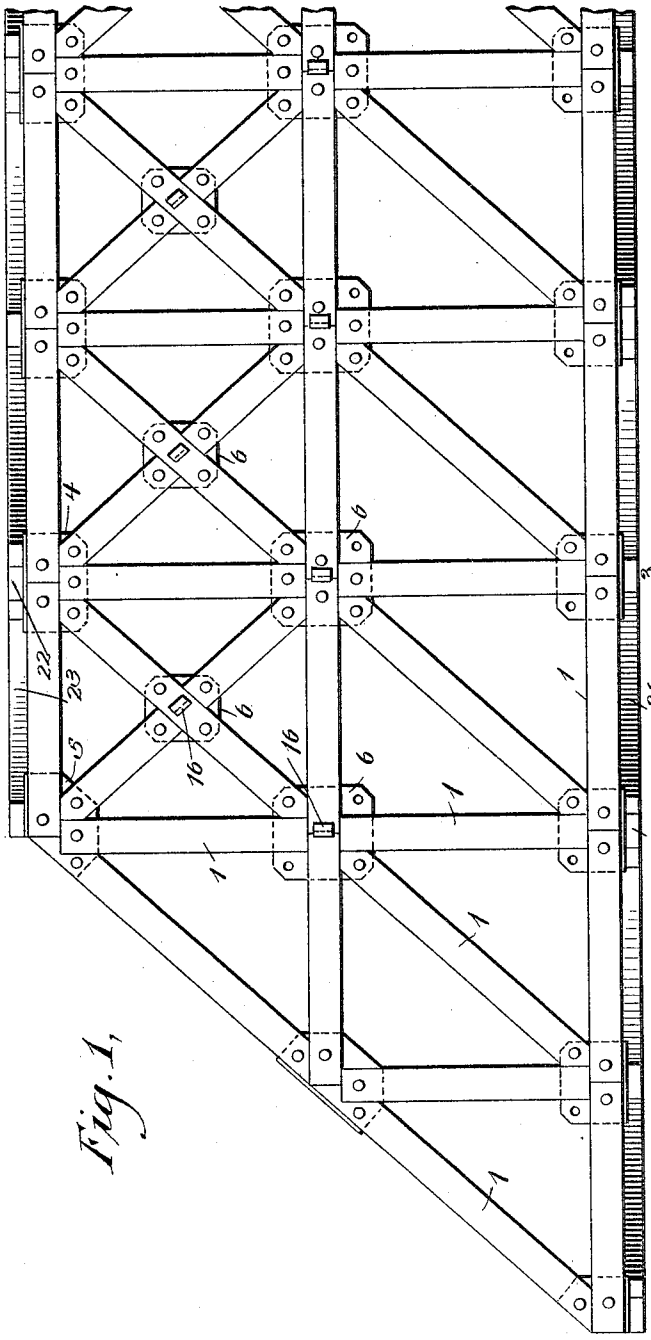


Fig. 1.

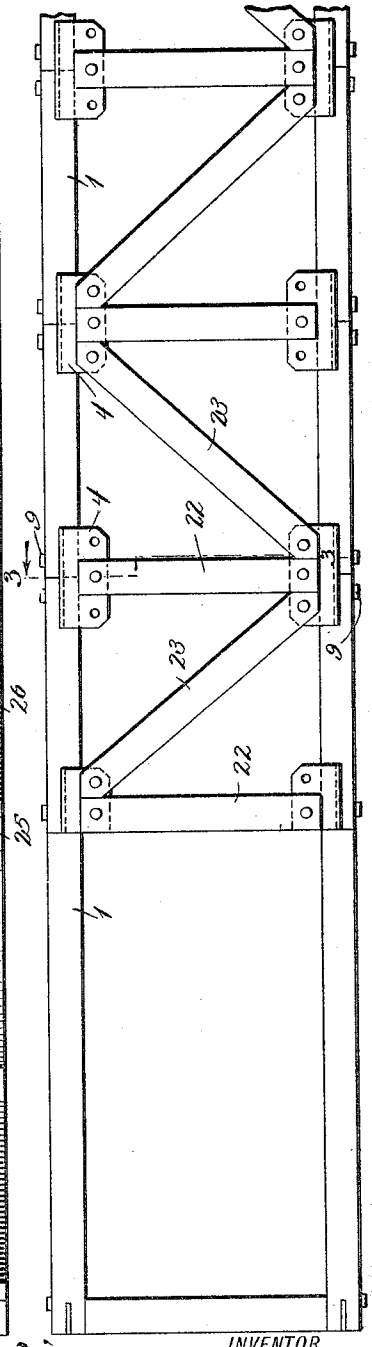


Fig. 2.

WITNESSES

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2 SHEETS—SHEET 2.

Fig. 3,

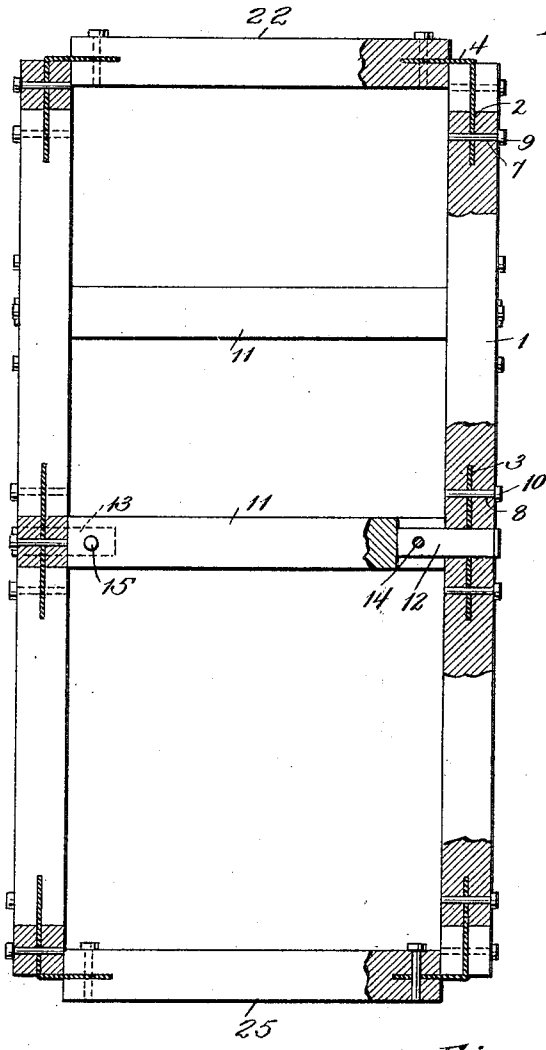


Fig. 4,

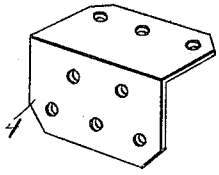


Fig. 5,

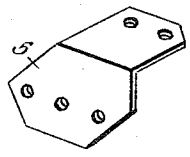


Fig. 6,

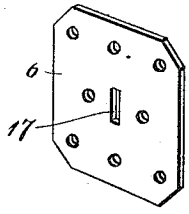


Fig. 8,

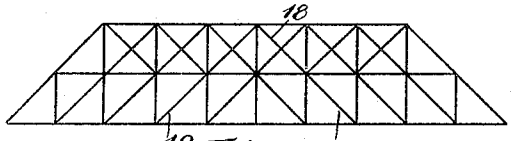


Fig. 7,

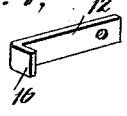


Fig. 9,

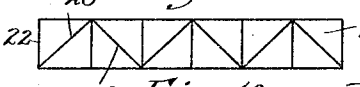
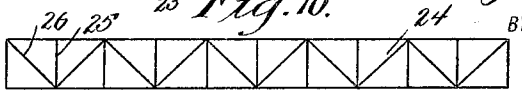


Fig. 10.



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UNITED STATES PATENT OFFICE.

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DETACHABLE CONNECTION FOR BUILDING-BLOCKS.

1,115,260. Specification of Letters Patent. Patented Oct. 27, 1914.

Application filed June 3, 1913. Serial No. 771,382.

To all whom it may concern:

Be it known that I, DOUGLAS M. WARD, a citizen of the United States, and a resident of Gary, in the county of Lake and State of Indiana, have invented a new and Improved Detachable Connection for Building-Blocks, of which the following is a full, clear, and exact description.

This invention relates to improvements in detachable connections, and in particular and has for an object to provide an improved toy building blocks structure wherein the various blocks may be connected up quickly and easily in such a manner as to retain their built up position.

A further object of the invention is to provide an improved set of blocks with notches in their ends and pin-receiving openings, whereby flat plates, angle bars, and other shaped connecting members may be used for connecting the various blocks together and locking the same in position after the same are connected, whereby a comparatively strong built up structure is produced.

In carrying out the objects of the invention, a plurality of blocks, preferably all of the same length, are provided, though odd length blocks may be used without departing from the spirit of the invention. Each of these blocks is provided with a slot in each end and a transverse aperture, the transverse aperture intersecting the slot. Associated with the blocks are connecting plates and angle irons or gusset members, designed to fit into the respective slots and to accommodate pins passed through the apertures in the blocks, the plates and angle bars being provided with apertures registering with the apertures in the blocks. In this way, the blocks when built up in any form are locked against falling apart.

A practical embodiment of the invention is represented in the accompanying drawings forming a part of this specification in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is a side view of part of a bridge built up with building blocks formed according to the present invention; Fig. 2 is a top plan view of the structure shown in Fig. 1; Fig. 3 is a section through Fig. 2 on the line 3—3, the same being on a slightly enlarged scale; Fig. 4 is a perspective view of one of the angle plates; Fig. 5 is a perspective view of a gusset plate; Fig. 6 is a perspective view of one of the connecting flat plates; Fig. 7 is a detail perspective view of the locking bar or catch; Fig. 8 is a diagram showing the blocks arranged in the form of a bridge; Fig. 9 is a diagram showing the arrangement of the blocks on top of the bridge disclosed in Fig. 9; and Fig. 10 is a diagram showing the arrangement of the blocks on the bottom of the bridge shown in Fig. 8.

Referring to the accompanying drawings by numerals, 1 indicates a block formed of any desired material, as for instance wood, provided with slots 2 and 3, into which any of the plates 4, 5, and 6 may be fitted. Apertures 7 and 8 are also provided in block 1, which accommodate the ends 9 and 10, as clearly shown in Fig. 3. The plates 5, 6, and 7 shown in Figs. 4 to 6 inclusive, are formed with apertures designed to register with the apertures 7 and 8 when the plates are assembled with the respective blocks, as shown in Figs. 1 to 3 inclusive, and when the blocks are assembled in various other ways. When the blocks are used for building a bridge, as shown in Figs. 1 to 3, the angle bars 4 are arranged to connect the top and bottom to the sides. At the juncture of the side bars 1, as shown in Fig. 1, there is arranged a connecting block 11 (Fig. 3) provided with catch bars 12 and 13 held in place by suitable removable pins 14 and 15. These catch bars are each formed with a hook end 16 designed to be hooked over plate 6 so as to prevent the sides from spreading. After the sides of the blocks 1 have been placed in position, the bars 12 and 13 may be passed through the slots 17 in the respective plates 6, and from thence into the bars 11 where they are locked by the pins 14 and 15 respectively.

From the diagram shown in Fig. 8, it will be observed that a plurality of cross bars or blocks 18 are used in the upper tier, and in the lower tire a plurality of diagonal blocks 19 are used at one end and a plurality of oppositely positioned diagonal blocks 20 at the opposite end. This forms a rigid top structure for the sides and a truss structure for the bottom part of the sides. The top 21 is provided with a plurality of cross blocks 22 and a plurality of diagonal blocks 23 for stiffening and bracing the upper structure.

The bottom 24 shown in Fig. 10 is constructed similar to the top, namely, with cross blocks 25 and diagonal blocks 26.

By forming the blocks 1 as described, with the slots at the ends and apertures for receiving pins, the blocks may be built up for forming a bridge, as shown in the drawing, or may be built up for forming other things according to the fancy of the one using the blocks. It will be noted that by providing flat and angular plates, the blocks may be locked or connected together so that they will remain in any position in which they are put without liability of being accidentally upset.

Having thus described my invention I claim as new and desire to secure by Letters Patent:—

1. A detachable structure comprising a pair of beam structures, means for connecting said beam structures together end for end, said means including a connecting plate formed with an aperture therein, a bracing beam associated with said beam structures, and a tying catch member formed with a hooked end extending through said aperture in said plate, and into said bracing beam, and a pin extending through part of said bracing beam and through said tying catch member.

2. A detachable structure comprising a pair of beam structures formed with slots in their adjacent ends and apertures arranged adjacent said slots, a plate fitting into said adjacent ends, said plate being formed with apertures, a pin for each of the apertures in said beam structures, said pins extending through said plate whereby the plate and the beam structures are locked together, said plate being formed with a substantially central aperture, a bracing beam associated with said beam structures, and a tying catch member formed with a hook and extending through said centrally arranged aperture in said plate and into said bracing beam, and a pin extending through part of said bracing beam and through said tying catch member.

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

DOUGLAS M. WARD.

Witnesses:
HARRY GEOGHEGAN,
LEO V. LEIFER.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."