O. C. SCHWARZ.

TOY BUILDING.

APPLICATION FILED AUG. 2, 1915.

1,204,908.

Patented Nov. 14, 1916.

4 SHEETS—SHEET 1.

Fig. 2.

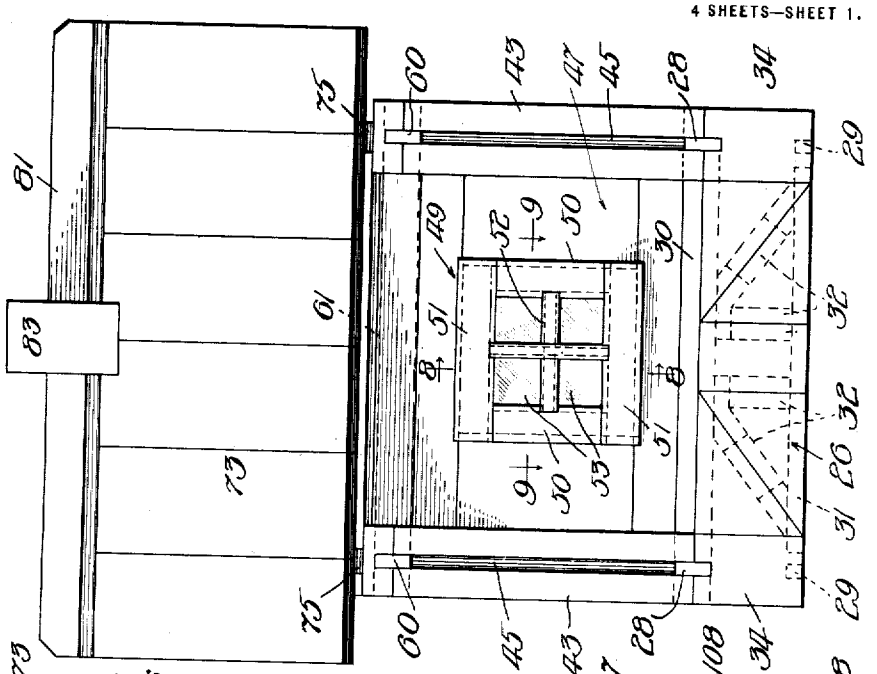


Fig. 2.

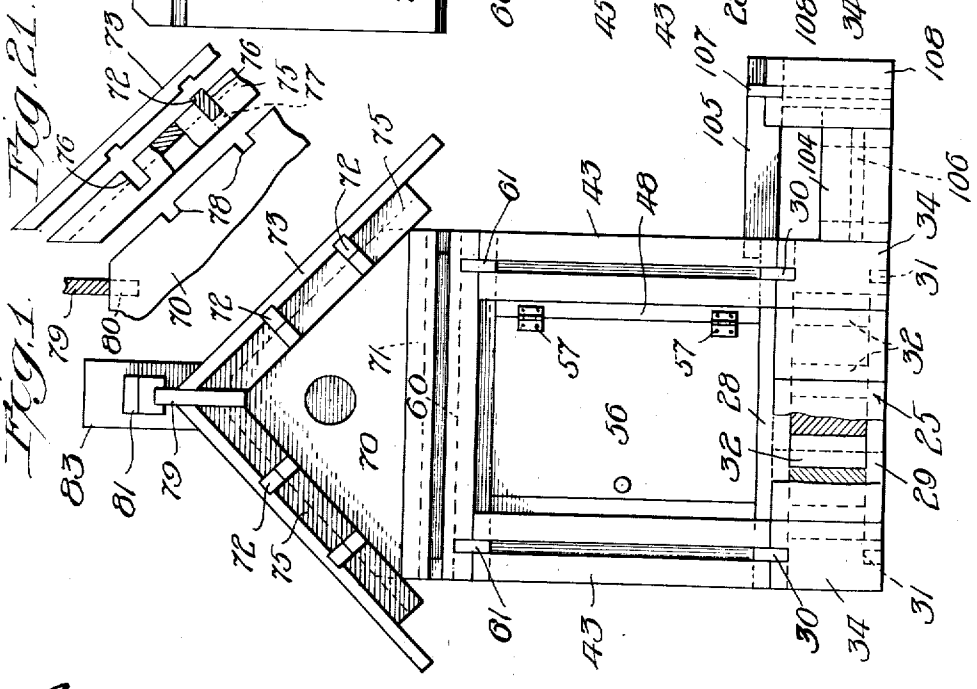


Fig. 1.

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4 SHEETS—SHEET 2.

Fig. 3.

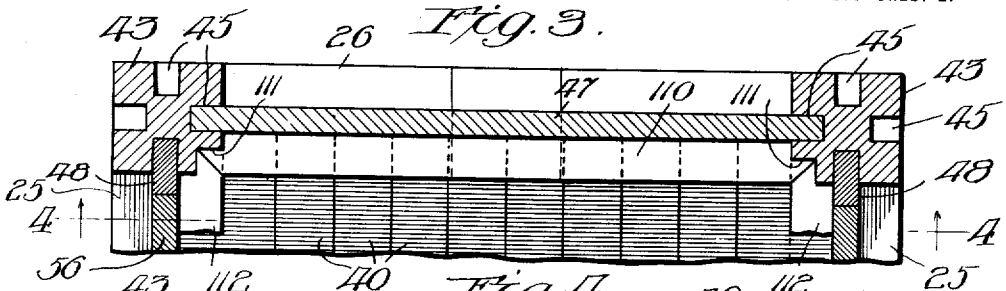


Fig. 4.

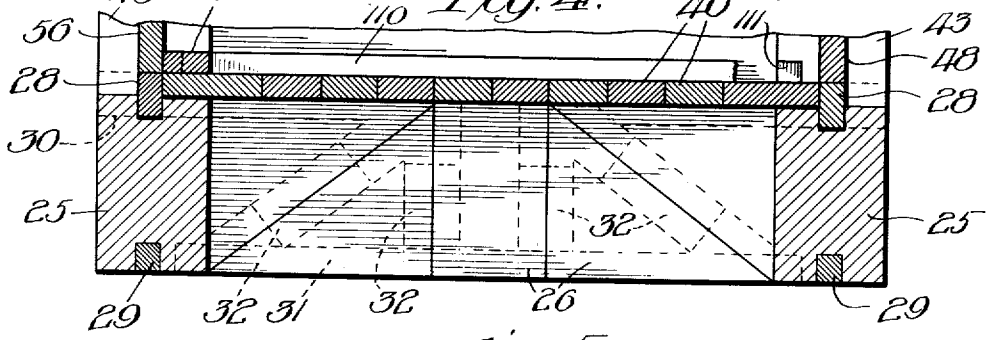


Fig. 5.

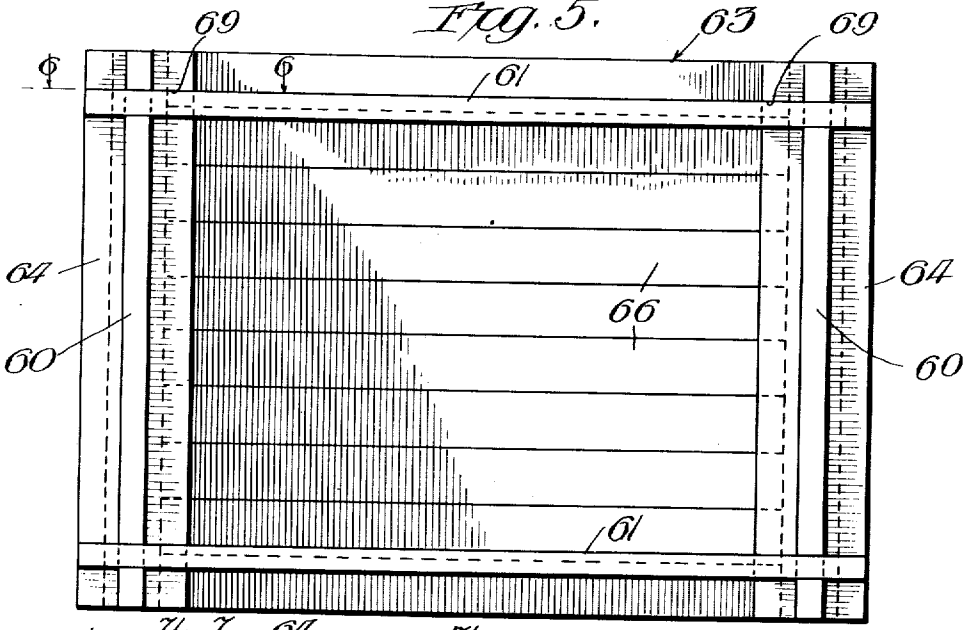


Fig. 6.

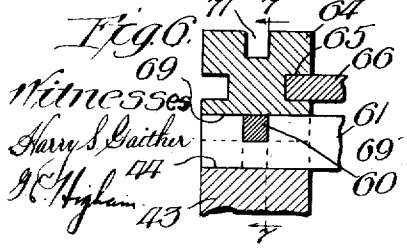
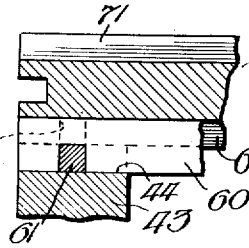


Fig. 7.



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4 SHEETS—SHEET 3.

Fig. 8.

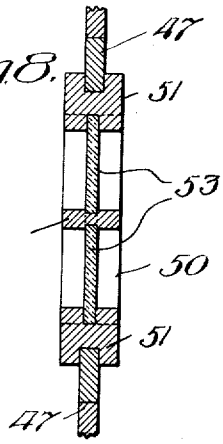


Fig. 9.

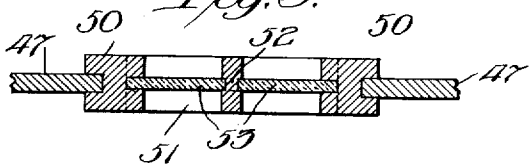


Fig. 10.

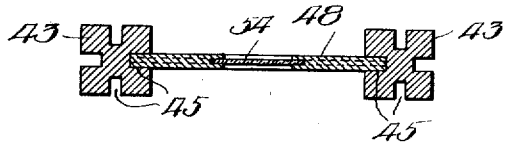


Fig. 11.

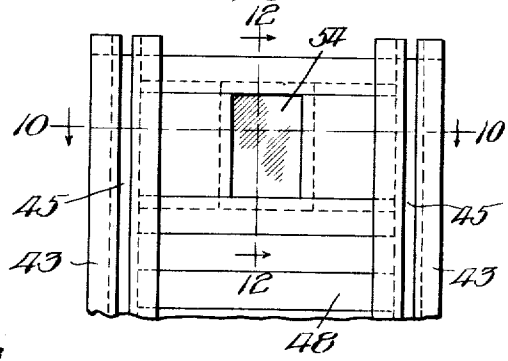


Fig. 12.

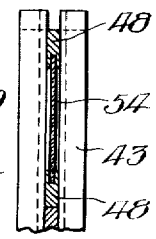


Fig. 13.

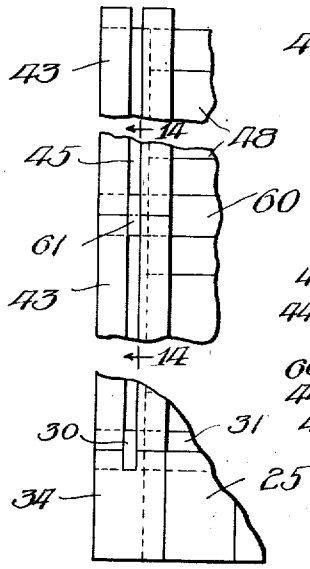


Fig. 14.

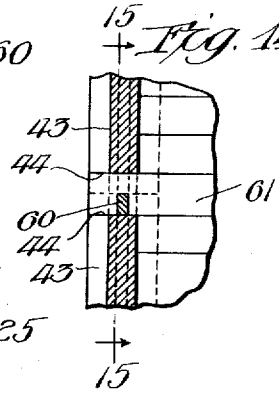
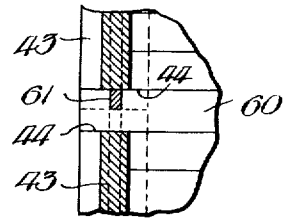


Fig. 15.



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4 SHEETS—SHEET 4.

Fig. 16.

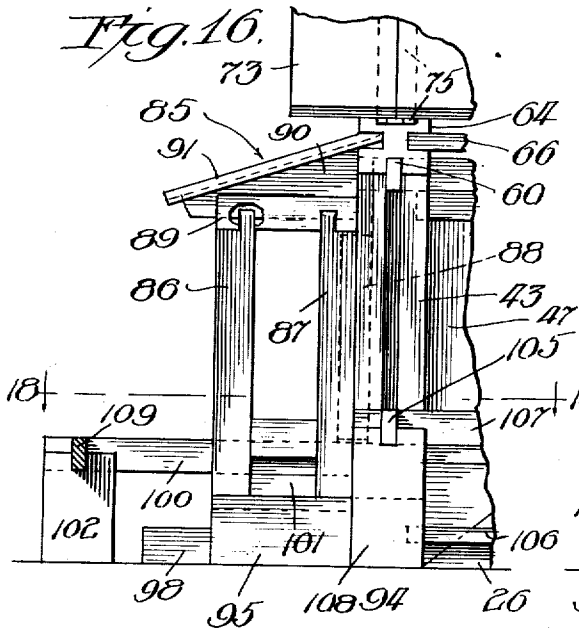


Fig. 17.

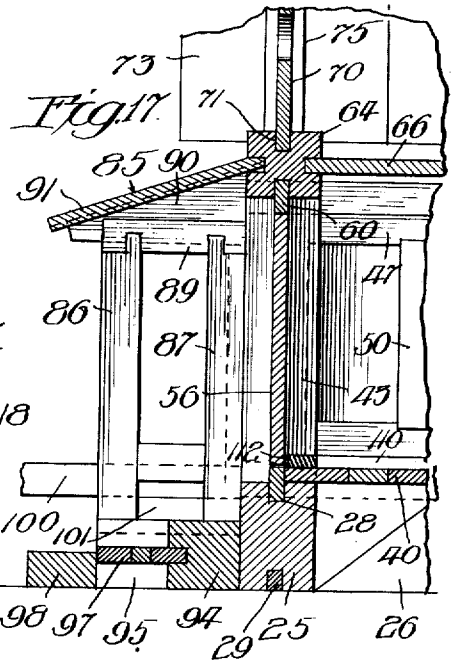


Fig. 22.

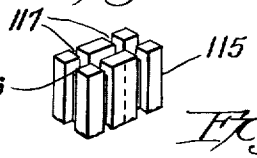


Fig. 18.

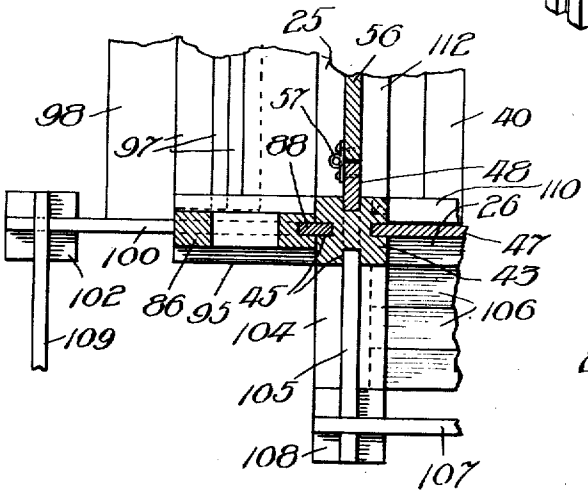


Fig. 19.

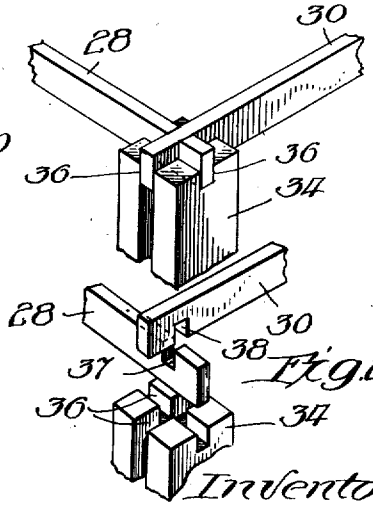


Fig. 20.

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TOY BUILDING.

1,204,908. Specification of Letters Patent. Patented Nov. 14, 1916.

Application filed August 2, 1915. Serial No. 43,061.

To all whom it may concern:

Be it known that I, OTTO C. SCHWARZ, a citizen of the United States, and a resident of New Chicago, in the county of Lake and State of Indiana, have invented certain new and useful Improvements in Toy Buildings; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the characters of reference marked thereon, which form a part of this specification.

This invention relates to improvements in toy buildings or structures made of interchangeable, assemblable parts so designed that the buildings or other structures of various sizes and dimensions may be made from a relatively small number of standard shapes and dimensions.

Among the objects of the invention is to provide improvements in toy building structures so constructed and arranged as to produce a solid set-up structure by means of interlocking binding devices associated with the elementary members of the structure.

Other objects of the invention are to provide interlocking structural parts so arranged as to produce unitary assembled sections of the building structure such as the foundation, the body of the building, the ceiling and the roof which, when assembled, may be handled as unitary components of the building or other structure.

Another object of the invention is to provide interlocking means between the component parts of the building structure so as to permit ready extension of the building in all its dimensions whereby, by use of the required number of blocks or parts, the building may be made of greater or less width and length, and of a single or a number of stories.

Other objects of the invention are to improve and simplify toy building structures, and the invention consists in the arrangement and combination of the parts shown in the drawings, described in the specification and more fully pointed out in the appended claims.

Figure 1 is an end view of a building embodying my invention. Fig. 2 is a side view thereof. Fig. 3 is a horizontal section taken through one of the side walls, two of the corner posts and parts of the end walls of the building. Fig. 4 is a section on the line 4—4 of Fig. 3. Fig. 5 is a bottom plan view of the ceiling structure. Fig. 6 is a detail section on the line 6—6 of Fig. 5. Fig. 7 is a detail section on the line 7—7 of Fig. 6. Figs. 8 and 9 are transverse sections, taken through the side wall window, on the lines 8—8 and 9—9, respectively, of Fig. 2. Fig. 10 is a section taken through the end wall window, on the line 10—10 of Fig. 11. Fig. 11 is a fragmentary view of the rear end wall of the building. Fig. 12 is a fragmentary section on the line 12—12 of Fig. 11. Fig. 13 is a fragmentary detail illustrating the manner of extending the corner posts and side walls of the building to produce a two or more storied building. Fig. 14 is a section on the line 14—14 of Fig. 13. Fig. 15 is a section on the line 15—15 of Fig. 14. Fig. 16 is a partial front elevation of the building showing a porch extension applied thereto. Fig. 17 is a vertical section thereof, in a plane parallel to the plane of Fig. 16. Fig. 18 is a horizontal section on the line 18—18 of Fig. 16. Fig. 19 is a perspective detail illustrating the manner of interlocking the binding or tying members to the corner elements of the structure. Fig. 20 is a perspective view of the parts shown in Fig. 19, separated from each other. Fig. 21 is a fragmentary view of the roof elements, separated from each other. Fig. 22 is a perspective view of a modified corner post or unit.

As shown in the drawings, the end and side foundation walls of the building comprise blocks 25, 26, respectively. The blocks 25 are rectangular and are locked together by means of upper and lower binding strips 28, 29 which are seated in registering grooves formed in the tops and bottoms of the blocks. The blocks constituting the side foundation walls are in part rectangular and in part triangular and are similarly joined together by means of upper and lower binding strips 30, 31. The blocks of the foundation walls may be joined by means of short keys 32 engaged in registering grooves in the contiguous side faces of the blocks. The corners of the foundation comprise short posts or blocks 34 which are joined to the foundation blocks by the binding strips 28, 29, 30 and 31, the upper faces of the posts or corner blocks being provided with right angled

grooves 36 to receive the ends of the binding or tying strips 28 and 30, as shown in Fig. 19. The lower binding strips of the side and end walls extend into notches in the sides of the corner posts, as indicated in dotted lines in Figs. 1 and 2. The upper binding strips 28 and 30 are provided at their ends and in their parts which are seated in the corner post grooves 36 with interlocking notches 37, 38, as indicated in Fig. 19, so that the said upper strips serve, when the foundation is assembled, to tie or interlock the component elements of the foundation walls together so that the assembled structure may be handled as a unitary part of the building. The floor is made up of a plurality of strips or boards 40, as shown in Figs. 3 and 4, which are supported at their ends on the foundation blocks inside the upper binding strips 28, 30.

43, 43 designate the corner posts of the building arranged above and in endwise relation to the corner posts 34 of the foundation. The said posts are provided at their upper and lower ends with right angled grooves 44 similar to the grooves 36 of the foundation corner blocks and adapted to fit at their lower grooved ends over the crossed interlocking ends of the upper foundation binding or tying strips 28, 30 whereby the posts are locked to the foundation. The said posts are provided with vertical grooves 45 arranged in the planes of the crossed grooves 44 to receive the built-up side and end walls 47, 48, respectively, of the building which latter are located in the planes of the upper foundation binding strips 28 and 30. The posts may also be provided at their outer faces with vertical grooves, as shown most clearly in Figs. 1, 2 and 3, so that they may be used interchangeably at the corners. Furthermore, the outwardly facing vertical grooves of the assembled posts may receive members to constitute extensions of the building proper, which extensions may be symmetric developments of the building to constitute a number of rooms or apartments, or may constitute porch extensions, as hereinafter described.

One side wall of the building is provided with a window 49 the construction of which is shown in Figs. 2, 8 and 9. Each window comprises two vertical side and top and bottom frames 50, 51, respectively, which are grooved to fit over the adjacent component parts of the side wall, and are notched at their inner sides to receive a cross sash member 52, said sash and frame members being grooved to receive glass panes 53. The rear wall of the building is provided with a single sash window 54 which is fitted in grooves in the component parts of the said end wall, as shown in Figs. 10, 11 and 12.

The front end wall of the building is provided with a swinging door 56 that is hinged at 57 to a fixed part of the front wall, said front wall being constructed to provide a door frame.

The upper ends of the corner posts 43 are tied together by means of end and side binding and tying strips 60, 61 which are notched at their ends to interlock with each other and with the posts at the crossed grooves of the posts in the manner illustrated in Figs. 1 and 2.

63 designates, as a whole, the ceiling of the building. It comprises front and rear beams 64, 64 which are provided at their inner sides with longitudinal grooves 65 to receive the strip or boards 66 which constitute the ceiling proper. The said beams 64 are also provided on their under sides with longitudinal grooves 67 to receive the upper edges of the end binding strips 60 and the said beams are also provided at their ends on their under sides with transverse grooves 69 which intersect the said longitudinal grooves to receive the ends of the side binding or tying strips 61, said side and end strips 60, 61 being provided with interlocking notches, as indicated in Figs. 6 and 7, in the same manner as are the foundation binding strips 28 and 30. The said side and end binding strips 60, 61 fitting as they do in the cross grooves of the beams 64 tie said parts together with the ceiling strips 66 to constitute a unitary ceiling structure. The side and end binding strips 60, 61 fit sufficiently loosely in the cross grooves of the corner posts to enable the ceiling structure thus made up to be lifted off or away from the corner posts. The beams 64 of the said ceiling structure are provided at their outer sides and at their ends with grooves and notches to receive the edges of an extension structure which may be built thereto.

The roof of the said building comprises triangular gable portions 70 which fit at their lower edges in longitudinal grooves 71 in the upper faces of the end ceiling beams 64, sheeting strips 72 which extend across the sloping edges of the gable members 70 and sloping roof boards 73 which are notched on their under faces to engage over the sheeting strips 72. The said sheeting strips 72 are interlocked to the gable members 70 by means of locking strips 75 which are grooved on their under sides to engage over upper sloping edges of the gable members 70, as shown in Figs. 1 and 21, and are provided with spaced notches 76 to receive the notched portions 77 of the sheeting strips, the notches 77 being made sufficiently wide to engage over the full width of the strips 75. The said gable members are provided in line with the notches 76 of the locking strips with shallow notches 78 to receive the notched portions 77 of the sheeting strips so that the said sheeting and locking strips interlock with the sloping edges of the gable

members to hold the sheeting strips from both endwise and transverse movement relatively to the gable members. The roof is completed at its ridge by a ridge strip 79 arranged between the upper meeting inclined edges of the roof boards 73 and provided with notches 80 to engage over the apices of the triangular gable members. The ridge strip may be crowned by a finishing strip 81 grooved to fit thereover and a block 83, in imitation of a chimney, may be applied over the crowning ridge strip and the adjacent roof strips.

In Figs. 13, 14 and 15 I have shown the manner in which the corner posts 43 of the building may be fitted in endwise relation to each other to constitute a vertical extension or additional story of the building. In this arrangement the crossed grooves at the lower faces of the upper end pieces engage over the crossed interlocking side and end upper tie or binding strips 60, 61 and the additional end and side walls are fitted between said posts and are engaged therewith in the same manner as shown in Figs. 1 and 2. It will thus be obvious that the main body of the building may be built up to any practicable height and the parts securely interlocked to constitute a rigid structure.

In Figs. 16, 17 and 18 is shown the manner of adding to the building a porch extension 85. The porch structure consists of front and rear posts 86, 87 at each side of the porch. The rear posts are grooved and are attached to the front corner posts of the building by means of keys or strips 88 and the front and rear posts at each side of the porch are connected to upper girders 89 which are notched to engage lugs on the upper ends of the posts. The said girders are in turn grooved at their upper ends to receive triangular end pieces 90 of the porch upon which the sloping roof 91 is supported, and said end pieces are notched to receive the post lugs whereby the posts, girders and end pieces are locked together. The rear edge of the sloping roof is engaged in the outwardly facing groove in the adjacent ceiling beam 64. 94 designates a portion of the floor of the porch which may consist of a transverse block, flanked by end pieces 95. A lower plane or step of the porch may consist of one or more strips 97, which fits at its ends in grooves in the members 94 and 95 and is arranged above the terminal step 98 of the porch which may consist of a loose block. 100, 100 designate side rails of the porch which extend at their inner ends inwardly through notches in the lower ends of the posts 86, 87 and are supported at their inner ends on the strips which are seated in grooves in the upper faces of the end blocks 95 of the porch floor and are supported at their outer ends on the posts or blocks 102.

In Figs. 16 and 18 is also shown a like arrangement of a side porch consisting of end members 104 that are connected by binding strips 105 to the adjacent building corner posts 43. The side porch floor strips 106 extend between the end members 104 and engage in grooves in said members, as shown in Fig. 18. A front porch rail 107 is supported on grooved posts 108 which also support the outer ends of the strip 105. The blocks 102 may support strips 109, shown in Figs. 16 and 18, to constitute portions of a fence which may surround the building, the strips being adapted to be supported about the building by corner posts similar to the posts 102.

Hold-down boards 110 are applied over the ends of the floor boards (Figs. 3 and 4) to hold the floor boards down and said hold-down boards fit in notches 111 of the corner posts 43. A threshold board 112, arranged across the door opening, may be similarly fitted to the notched corner posts.

In Fig. 22 is shown a double corner post or element 115 provided in its end face with a long notch 116 and with two short transverse notches 117, 117. The long notch is adapted to receive in endwise relation two binding strips and the shorter notches are adapted to receive cross binding strips which are adapted to interlock with the strips in the longer notch 116 so as to bind all the strips together and to the post. Said post 115 provides means for building an extension to the structure and to firmly interlock the extension to the main structure.

It will be understood that the structural details shown are capable of some variation within the scope of the appended claims, and that it is the intent to claim all of inherent novelty shown in the drawings and described in the specification.

I claim as my invention:—

1. A toy building structure comprising foundation walls composed of interchangeably assemblable main and corner blocks provided with registering grooves and binding strips seated in said grooves and intersecting and interlocked to each other at their ends to and within the corner blocks.

2. A toy building structure comprising foundation walls composed of interchangeably assemblable main and corner blocks provided with registering grooves with the grooves of the corner blocks intersecting, and binding strips seated in said grooves and notched at their ends to interlock with each other in said intersecting grooves.

3. A toy building structure comprising foundation walls composed of interchangeably assemblable main and corner blocks provided at their upper and lower sides with registering grooves, with the grooves in the upper faces of the corner blocks intersecting, binding strips in the lower grooves ex-

tending into the corner blocks and other binding strips in the upper grooves and notched at their ends to interlock with each other in said intersecting grooves of the corner blocks.

4. A toy building structure comprising foundation walls composed of interchangeably assemblable main and corner blocks provided with registering grooves, binding strips seated in said grooves and intersecting and interlocked to each other at their ends and to the corner blocks, said blocks being grooved in their meeting side faces, and binding members seated in said latter grooves.

5. A toy building structure comprising foundation walls composed of interchangeably assemblable main and corner blocks provided with registering grooves, binding strips seated in said grooves and intersecting and interlocked to each other at their ends and to the corner block, corner posts rising from said foundation, side and end walls fitted between said posts, said corner posts being interlocked at their lower ends to the intersecting binding strips.

6. A toy building structure comprising grooved foundation blocks, strips seated therein and intersecting and interlocked to each other at the corners of the foundation, corner posts interlocked at their lower ends to the intersecting strips and wall members between said posts.

7. A toy building structure comprising grooved foundation wall, strips seated therein and intersecting and interlocked to each other at the corners of the foundation, corner posts interlocked at their lower ends to the intersecting strips, binding strips extending between said posts and intersecting and interlocked to each other at the tops of the posts, and a ceiling structure interlocked to said binding strips.

8. A toy building structure comprising grooved foundation walls, strips seated therein and intersecting and interlocked to each other at the corners of the foundation, corner posts interlocked at their lower ends to the intersecting strips, binding strips extending between said posts and intersecting and interlocked to each other at the tops of the posts, a ceiling structure interlocked to said binding strip and a roof structure removably fitted to the ceiling structure.

9. A toy building structure comprising corner elements provided at their ends with intersecting grooves and tie elements fitted in and intersecting each other at said grooves within the corner elements, with means for interlocking the tie elements together at their intersections.

10. A toy building structure comprising corner elements grooved at their sides and provided at their ends with intersecting grooves, tie elements fitted in and intersecting each other at said grooves, with means for interlocking the tie elements together at their intersections and wall elements between and supported on said grooved corner elements.

11. A toy building structure comprising side grooved corner posts, said posts being provided at their upper and lower ends with intersecting grooves, upper and lower sets of binding strips which are notched at their ends for interlocking engagement and seated at their interlocked parts in the intersecting grooves and wall members supported on the grooved posts.

12. In a toy building structure, a ceiling unit comprising grooved beams, ceiling strips extending between and supported at their ends in said grooved beams, and tie elements interlocked at their ends to said beams to tie the ceiling elements together to constitute a unitary ceiling structure.

13. In a toy building structure, a ceiling unit comprising beams grooved in their proximate faces, ceiling strips supported in the grooves thereof, said beams being provided on their under sides with longitudinal grooves and at their ends with transverse grooves intersecting the longitudinal grooves, binding strips in said longitudinal grooves and other binding strips extending between the beams and seated in said transverse beam grooves and interlocked to each other.

14. In a toy building structure, a ceiling unit comprising beams grooved on their proximate faces, ceiling strips supported in the grooves thereof, said beams being provided on their under sides with longitudinal grooves and at their ends with transverse grooves intersecting the longitudinal grooves, binding strips in said longitudinal grooves and other binding strips extending between the beam grooves and seated in said transverse grooves, and interlocked to each other in said grooves, combined with building corner posts provided at their upper ends with intersecting grooves to receive the intersecting binding strips.

15. A toy building structure comprising grooved corner posts, wall elements supported on the grooved posts, a ceiling unit interlocked to the upper ends of the corner posts, said ceiling unit embracing parallel beams which support ceiling strips, said beams being provided at their upper sides with longitudinal grooves and a roof unit provided with gable members which are seated in upper grooves of the said beams.

16. In a toy building structure, a roof comprising gable members provided in their sloping edges with notches, sheeting strips extending between the gable members and interlocked to said notched edges, and roof-

ing strips grooved at their lower sides to fit upon and be supported by said sheeting strips.

17. In a toy building structure, a roof unit comprising end gable members provided in their sloping edges with notches, sheeting strips extending between the gable members and interlocked to said notched edges, roofing strips grooved at their lower sides to fit upon and be supported by said sheeting strips, and a ridge bar extending between said gable members and interlocked thereto and fitted between the upper ends of said roofing strips.

18. In a toy building structure, a roof unit comprising end gable members, grooved interlocking strips crowning the sloping edges of the said members, said strips and gable members being provided with registering notches, notched sheeting strips extending between the gable members and interlocked at their notched portions with the notched portions of said grooved strips and gable members, and roofing strips supported on said sheeting strips.

19. In a building structure, a corner element provided at its end with intersecting grooves and tying elements notched at their ends and seated in said grooves and interlocking at their notched portions in the end intersecting grooves.

20. A toy building structure comprising grooved corner posts, a foundation to which said posts are interlocked and from which they rise, wall elements supported in the grooved corner posts, a roof unit supported also on the said corner posts, and a porch structure having grooved posts which are attached to the building by interfitting keys and a roof supported on said porch posts.

21. A building structure comprising a foundation composed of interlocked, interchangeably assemblable blocks, said blocks being provided on their upper faces with registering grooves, binding elements seated in said grooves and notched at their ends and interlocked at their notched ends with the grooves in said blocks, floor strips extending between and supported on two opposite rows of foundation blocks, and downholding strips overlying the ends of the floor strips.

22. A building structure comprising a foundation composed of interlocked, assemblable blocks, said blocks being provided at their upper faces with registering grooves, binding elements seated in said grooves and notched at their ends and interlocked at their notched ends with the grooves in said blocks, floor strips extending between and supported on said foundation blocks, grooved wall posts supported on and interlocked to the corner posts of the foundation, wall members supported in said grooved posts, one of the wall members being provided with a door and a threshold strip overlying the floor and extending across the door and interlocked at its ends to two adjacent corner posts.

23. In a building structure, a corner element provided at its sides with grooves to receive and support wall elements and provided at its ends with intersecting grooves adapted to receive intersecting binding elements of the building structure, whereby the corner posts may be fitted end to end to provide an extension of the building and to be interlocked by the intersecting binding elements seated in the intersecting grooves.

24. A building structure comprising a unitary foundation structure embracing corner elements, intervening blocks locked to each other and to the corner elements, grooved wall posts rising from and interlocked to the corner elements of the foundation, wall members supported in the grooved posts, a unitary ceiling structure having means to interlock it to the upper ends of the wall posts and a unitary roof structure having means to interlock it to the ceiling structure, the parts being so constructed that the foundation, ceiling, walls and roof structures are assembled as units and applied to each other to complete the building structure.

25. In a building structure, a double or extension corner element provided at its end with a long notch and two intersecting notches, combined with tie elements laid end to end in the long notch and other tie elements laid in the intersecting notches and interlocked with the first mentioned tie elements.

26. In a building structure a porch comprising posts having extensions, notched girders to receive said extensions of the posts and grooved to receive end pieces, and end pieces seated in said grooves and notched to receive the post extensions, whereby the parts are locked together.

In testimony, that I claim the foregoing as my invention I affix my signature in the presence of two witnesses, this 23rd day of July, A. D. 1915.

OTTO C. SCHWARZ.

Witnesses:
W. L. HALL,
G. E. DOWLE.