April 13, 1937. E. H. JOHANNES 2,077,065

BUILDING LUMBER

Filed May 1, 1933 2 Sheets-Sheet 1

FIG. 1

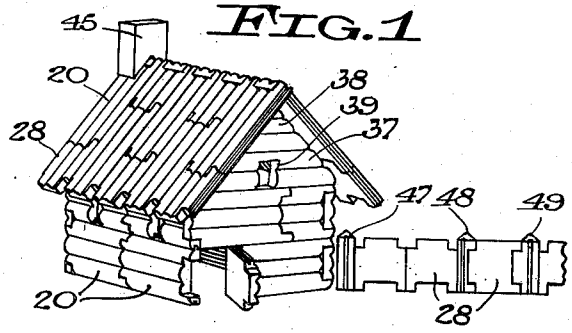


FIG. 2

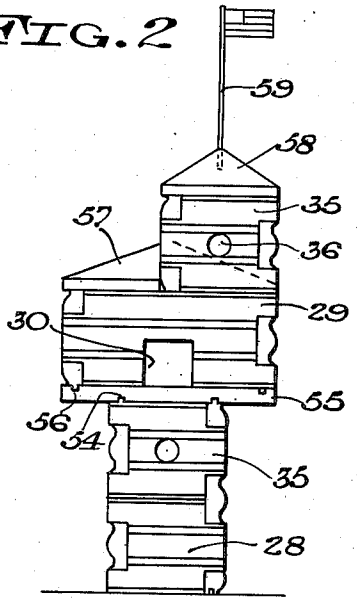


FIG. 3



FIG. 4

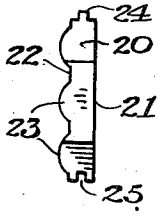


FIG. 5

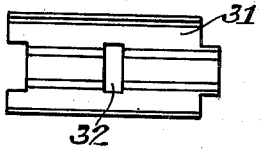


FIG. 6

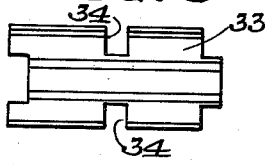


FIG. 12

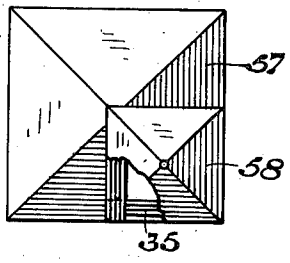


FIG. 7

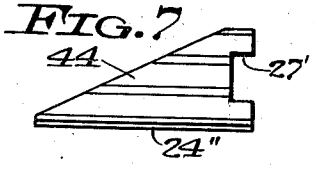


FIG. 8

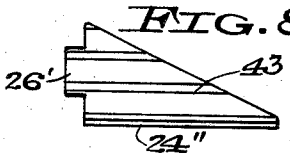


FIG. 13

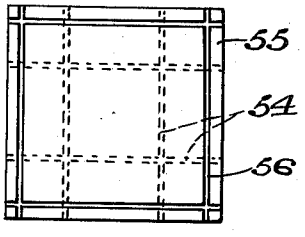


FIG. 9

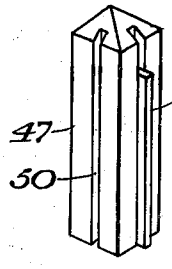


FIG. 10

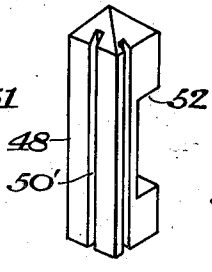
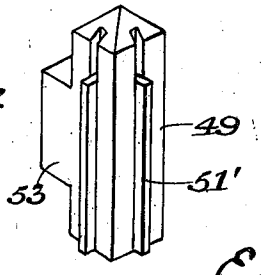


FIG. 11



WITNESSES

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BUILDING LUMBER

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FIG. 14

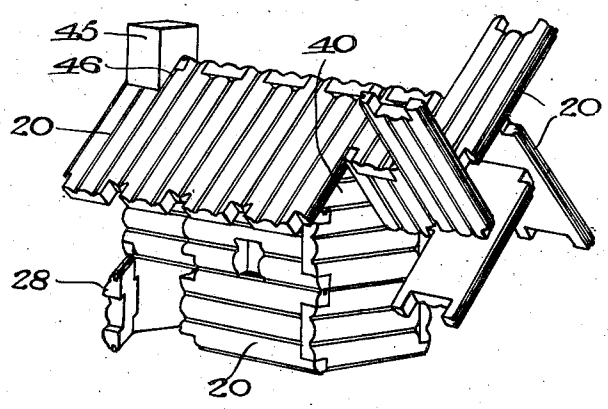


FIG. 15

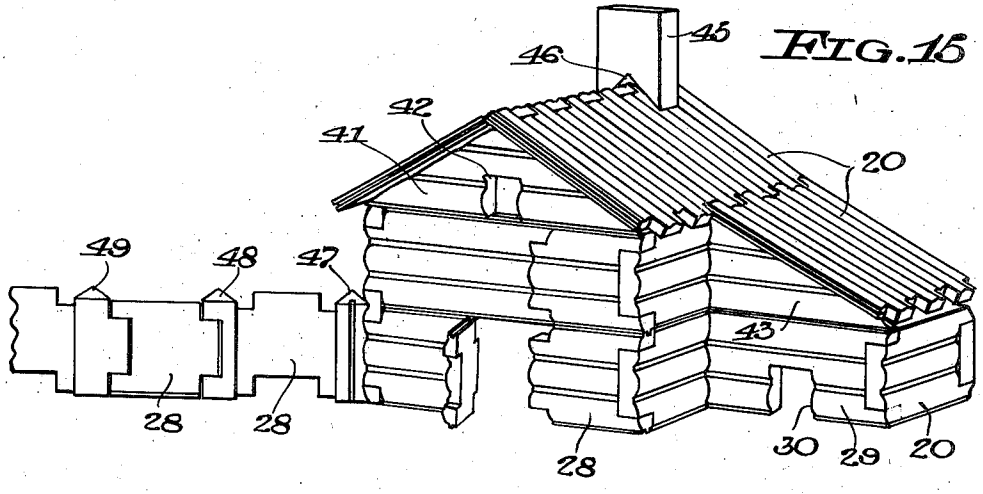


FIG. 16

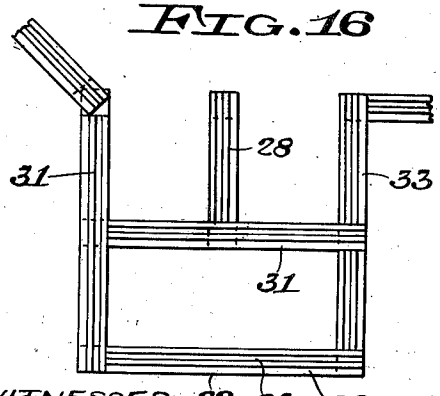
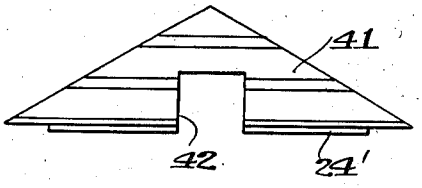


FIG. 17



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2,077,065

BUILDING LUMBER

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Application May 1, 1933, Serial No. 668,703

3 Claims. (Cl. 46—25)

The invention relates to building lumber for fabricating toy structures, and has for an object to provide building lumber which can be readily assembled and interfitted by children to produce toy buildings, fences and other structures.

Another object of the invention is to provide a building block or slab which is corrugated on one face to simulate logs and which is flat on the opposite face, the edges of the block having joint-forming parts adapted to frictionally interfit with the mating parts of other building elements.

The invention further consists in the several features hereinafter described and claimed.

In the accompanying drawings,

Fig. 1 is a perspective view of a toy log cabin and fence constructed with the building lumber of the invention;

Fig. 2 is an elevation of a toy log block house constructed with the building lumber;

Fig. 3 is a side view of one of the building elements;

Fig. 4 is an end view of the building element of Fig. 3;

Figs. 5 and 6 are side views of modified forms of building elements;

Figs. 7 and 8 are side views of other modified forms of building elements;

Figs. 9, 10, and 11 are perspective views of fence posts;

Fig. 12 is a top plan view of the block house of Fig. 2, parts being broken away;

Fig. 13 is a top plan view of a platform used in the block house;

Fig. 14 is a perspective view of a toy log mill constructed with the building lumber;

Fig. 15 is a perspective view of a toy log cabin having a lean-to;

Fig. 16 is a top plan view of a wall assembly formed by some of the building elements, and

Fig. 17 is a side view of another form of building element.

In these drawings, **20** designates one form of building element, which is shown in detail in Figs. 3 and 4, and which consists of a rectangular plate-like block or slab, preferably of wood, having a flat inner face **21** and a corrugated outer face **22**. The corrugated face carries a plurality of rounded parallel beads **23** extending longitudinally of the block and simulating logs. The opposite side edges of the block are formed with a tongue **24** and a groove **25** respectively, both extending longitudinally of the block. The opposite end edges of the block are provided with a tenon **26** and a mortise **27**, respectively, preferably arranged substantially midway between the tongued and grooved edges. At one end of the block the tenon projects beyond both of the corresponding ends of the tongued and grooved edges, and the other end of the block has at its corners projecting tenon-like parts onto which the tongued and grooved edges extend. Preferably, the effective length of the block is twice the effective width of the block, excluding the tongue **24** and the tenon **26**. A rectangular block **28** is similar to the block **20**, but has only one-half the effective length of the latter block. The edges of the blocks **20** and **28** are adapted to frictionally interfit with the mating edges of similar blocks, or of other building elements hereinafter described.

A block **29** (Figs. 2 and 15) is similar to the block **20** but is provided with a rectangular notch **30** in one side edge simulating a door or window opening. A block **31** (Fig. 5) is similar to the block **20** but has an intermediate rectangular opening **32** to frictionally receive the tenon of another block. A block **33** (Fig. 6) is similar to the block **20** but is provided with intermediate rectangular notches or mortises **34** in opposite edges to frictionally receive the forked mortised end of another block. The blocks **31** and **33** permit the use of other blocks forming partition walls, as indicated in Fig. 16. A block **35** is similar to the block **28** but has a port hole **36** and is suitable for use in the block house shown in Fig. 2.

Several wall-forming blocks with diagonal edges are provided for supporting roof panels. As seen in Fig. 1, a trapezoidal block **37** is surmounted by a small triangular block **38** to form a triangular wall section. If desired, a window notch **39** may be formed in the block **37**. The span of the block **37** is here indicated to be one and one-half times the length of the block **20**. The sloping edges of the blocks **37** and **38** are at an angle of 45° to the horizontal. A triangular block **40**, used in the mill building of Fig. 14, is similar to the triangular panel formed by the blocks **37** and **38** and has a span substantially equal to the length of the block **20**.

For supporting roof panels of less slope, as seen in Fig. 15, other triangular blocks are employed. A block **41**, shown in detail in Fig. 17, is used in the building shown in Fig. 15, and may have a window opening **42**. The span of the block **41** is substantially one and one-half times the length of the block **20**, and the height of the block is substantially equal to the width of the block **20**. Tongues **24'** extend along the lower edge of

the block 41 to be frictionally received in the grooves of subjacent blocks.

For supporting the lean-to roof of the cabin of Fig. 15, there are used triangular blocks 43 and 44 shown in detail in Figs. 7 and 8. Each of these blocks has substantially the same length and height as the block 20. The blocks 43 and 44 are provided with a tenon 26' and a mortise 27', respectively, to interfit with other wall-forming blocks. The blocks 43 and 44 are also capable of fitting together endwise to form a long span wall section. The lower edges of the blocks 43 and 44 are formed with tongues 24''.

The roof panels of the cabin of Fig. 1 are formed by fitting together edgewise a number of the blocks 20 and 28, the laterally adjacent blocks being staggered. The length of each slope of the roof is made up by one block 20 interfitting endwise with one block 28. In the mill of Fig. 14, one end of the roof carries a rectangular frame made from four of the short blocks 28, the upper two of which interfit with the side edges of the end blocks of the roof. Four of the blocks 20 interfit with side edges of the frame blocks 28 to simulate a wind wheel. A chimney block 45 has a V-notch 46 by which it can be saddled over the ridge of any one of the cabin roofs.

The mortise and tenon joints between the ends of the blocks 20 or similar blocks are such that the interfitting blocks can be placed in alignment or in angular relation. The short blocks 28 can be used as swingable doors, as indicated in Figs. 1, 14, and 15. The width of the mortise 27 of the block 20 or similar block is one-half the width of the block, and the effective width of each of the tenon-like parts on opposite sides of the mortise is one-quarter the width of the block, or one-half the width of the mortise 27 or tenon 26. When two of the blocks are assembled edge-to-edge by the tongue-and-groove joints, the adjacent tenon-like parts of the two blocks combine to form a full-width composite tenon, so as to permit symmetrical patterns to be produced both in composite panels and at building corners. The full-width composite tenon thus formed will frictionally fit in either the corresponding composite mortise formed at the ends of a pair of similar edgewise-connected blocks, or in the mortise 27 of the block 20 or similar block.

Fence posts 47, 48, and 49 are provided to cooperate with the blocks, especially the short blocks 28, for the construction of a fence, as seen in Figs. 1 and 15. The post 47 is of square cross-section and has a vertical groove 50 on one side and a vertical tongue 51 on an adjacent side. The post 48 has vertical grooves 50' on adjacent sides and a rectangular notch or mortise 52 on another side, the mortise having the same width as the block tenon 26. The post 49 has vertical tongues 51' on adjacent sides and a tenon 53 on another side, the tenon having the same width as the mortise 52. The blocks 28 are set vertically to simulate a picket fence and interfit with each other and with the fence posts 47, 48, and 49, as seen in Figs. 1 and 15. Another block 28 is disposed as a gate between the fence posts 48 and 49 and has its opposite ends interfitting with the mortise 52 and tenon 53. The gate-forming block may be swung on one of these posts. The posts 48 and 49 may also be interfitted with the blocks 28 or blocks 20 when these blocks form part of a building wall.

In the block house of Fig. 2, four of the short blocks 28 are assembled in a square wall frame to form a base section, and four of the similar blocks 35 form a similar wall frame interfitting with the upper edges of the blocks 28. The tongues of the blocks 35 are uppermost and fit in cross grooves 54 formed in the bottom face of a square platform 55, which overhangs the frame of blocks 35. The upper face of the platform has cross grooves 56 therein to receive the tongues of four of the blocks 29 assembled into a square wall frame. The frame of blocks 29 is surmounted by a pyramidal roof section 57. In the present instance one corner of the roof section is cut away to admit a square wall frame of the blocks 35, the tongues of two of these blocks entering the grooves of two of the blocks 29. The uppermost wall frame of blocks 35 is surmounted by a pyramidal roof section 58 carrying a flag staff 59.

In assembling the various blocks into panels for the walls and roofs of the buildings, the blocks are preferably placed flatwise on a table or other support and fitted together, and the panels are then placed in upright position to be interfitted with companion panels. The relation of the tongues, grooves, tenons, and mortises on the blocks is such that when any two of the rectangular blocks are interfitted end to end with the corrugated faces thereof at the same side, the tongues thereof will be at the same edge of the assembly, so as to insure the proper fitting of additional pieces to the several edges of the assembly. Because of the position of the mortises and tenons at the ends of the blocks 20 and similar blocks, it is possible to form building corners with superposed blocks, and also ridged roofs, without need for transversely notching either the tongued or grooved edges of the blocks.

What I claim as new and desire to secure by Letters Patent is:

1. A building toy comprising a pair of rectangular plate-like wall-forming blocks, two opposite edges of each block having a tenon and a mortise respectively to interfit with the complementary edges of the other block, and two other opposite edges of each block having tongue-and-groove parts, a side of at least one of said blocks being apertured at an intermediate portion to interfit with one of the mortise and tenon edges of the other block, said blocks when thus selectively interfitted edge-to-edge or edge-to-side having their tongue-and-groove edges in flush relation.

2. A toy building element comprising a substantially rectangular plate-like block two opposite parallel edges of which are tongued and grooved longitudinally of the block to frictionally interfit with the mating edges of similar blocks, and two other opposite edges of which respectively have a tenon and a mortise to frictionally interfit with the complementary mating mortised and tenoned edges of similar aligned and angularly extending blocks, said tenon at one end of the block projecting beyond the ends of the tongued and grooved edges, and the other end of the block having at its corners projecting tenon-like parts onto which said tongued and grooved edges extend, a pair of said blocks when interfitted edge-to-edge by their tongued and grooved edges having their adjacent tenon-like parts forming a composite tenon at one end adapted for engagement in a corresponding composite mortise formed at an end of a pair of similarly interfitted blocks.

3. A toy building element comprising a substantially rectangular plate-like block two op-

posite parallel edges of which are tongued and grooved longitudinally of the block to frictionally interfit with the mating edges of similar blocks, and two other opposite edges of which respectively have a tenon and a mortise to frictionally interfit with the complementary mating mortised and tenoned edges of similar aligned and angularly extending blocks, said tenon at one end of the block projecting beyond the ends of the tongued and grooved edges, and the other end of the block having at its corners projecting tenon-like parts onto which said tongued and grooved edges extend, a pair of said blocks when interfitted edge-to-edge by their tongued and grooved edges having their adjacent tenon-like parts forming a composite tenon at one end adapted for engagement in a corresponding composite mortise formed at an end of a pair of similarly interfitted blocks, said composite tenon having the same width as the first-named full-width tenon whereby to selectively engage the composite mortise or the full-width mortise, and to present a symmetrical appearance with the full-width tenons.

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