

Nov. 23, 1926.

1,608,009

O. H. STRUB

TOY BUILDING BLOCKS AND THE LIKE

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2 Sheets-Sheet 1

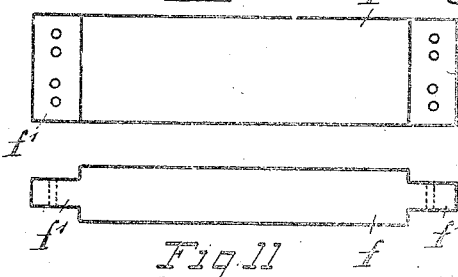
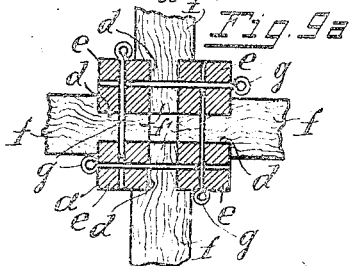
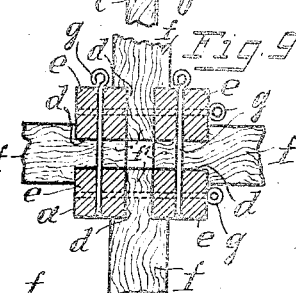
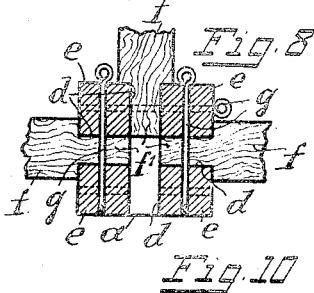
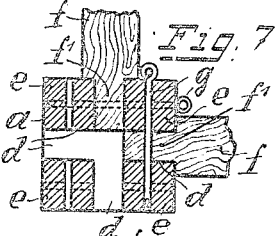
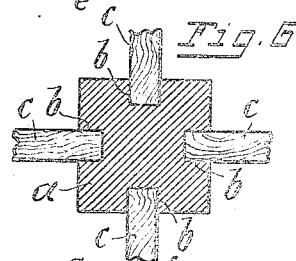
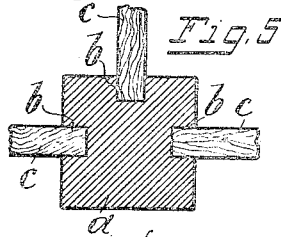
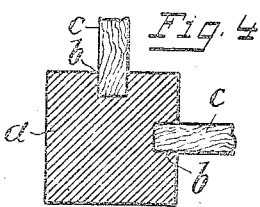
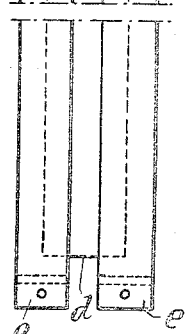
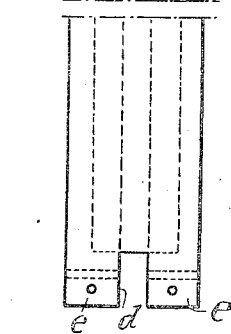
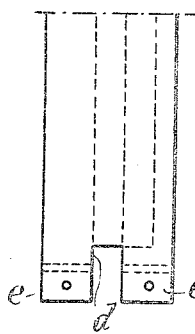
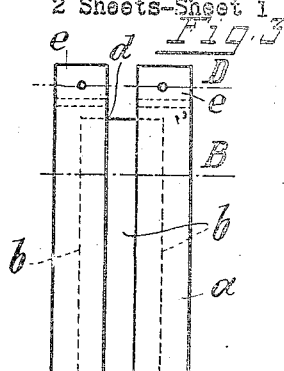
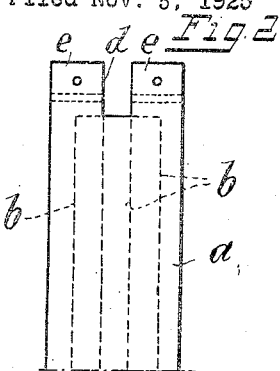
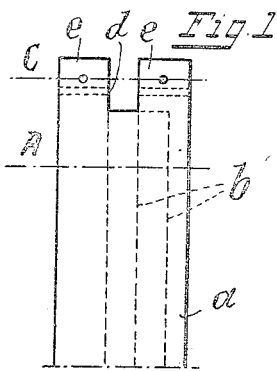


Fig. 11

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Fig. 12

Fig. 13

Fig. 14

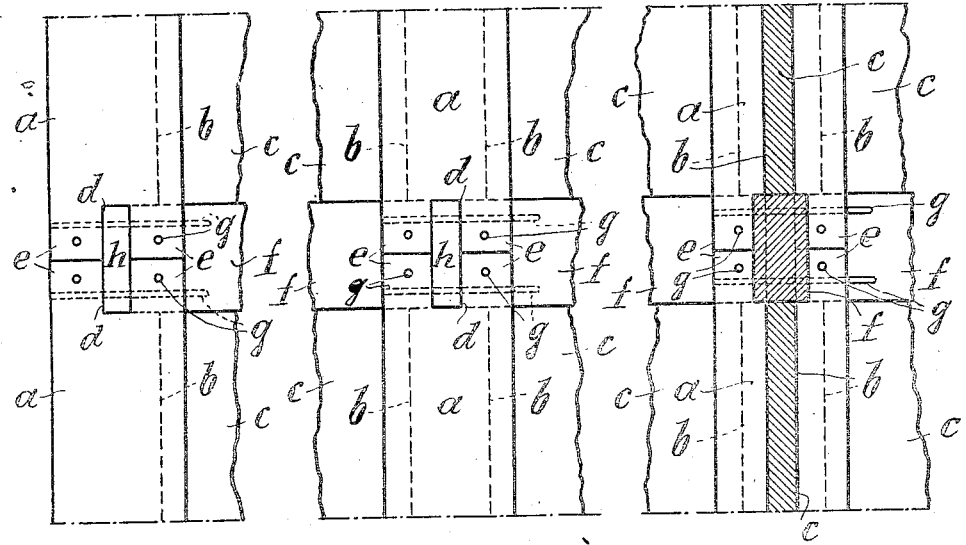


Fig. 15

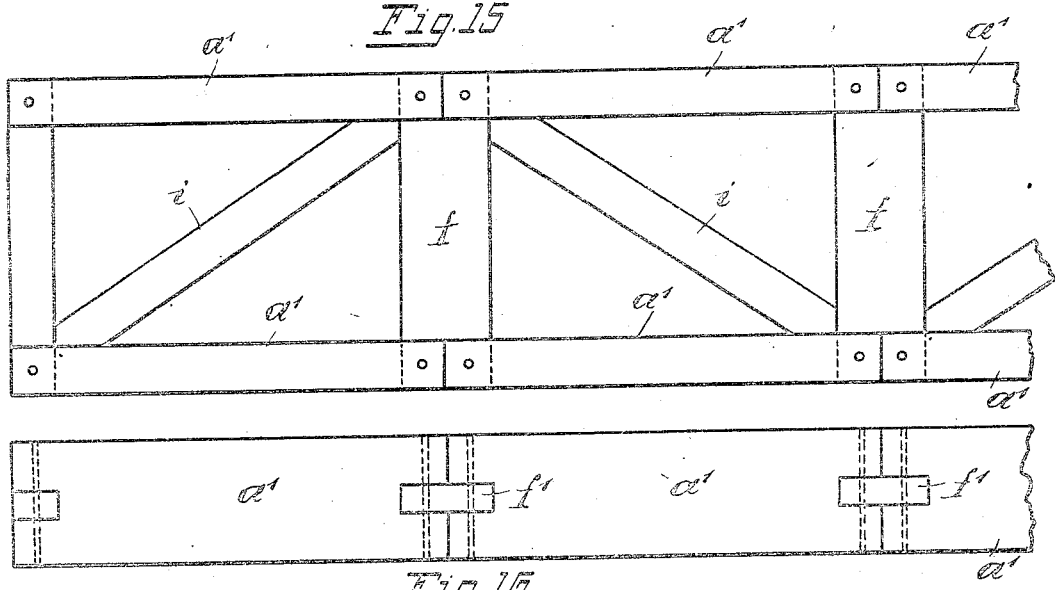


Fig. 16

Fig. 17

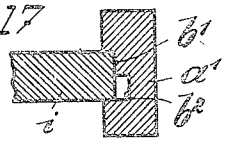
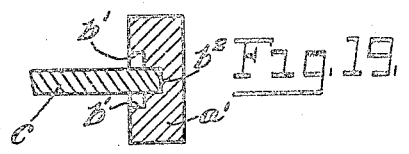
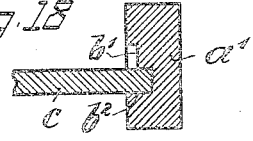


Fig. 18



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Patented Nov. 23, 1926.

1,608,009

UNITED STATES PATENT OFFICE.

OTTO HERMANN STRUB, OF MUNICH, GERMANY.

TOY BUILDING BLOCKS AND THE LIKE.

Application filed November 5, 1925, Serial No. 66,976, and in Germany August 29, 1924.

The invention relates to toy building blocks and the like which may be of wood or other suitable material, and its object is to provide blocks which can be used for a great variety of structures and are firmly locked together, in the course of erection, so that stable and portable structures are formed. These structures may be in imitation of houses, stands, lattice girders, bridges, and many other edifices or portions thereof, including edifices in whose construction wood and iron are commonly used together.

In my invention I use long blocks, which I may call beams with grooves, in their end faces, dividing the end portions into bosses or tenons, the grooves serving to receive tongues on connecting members or ties, the tongues and bosses having holes for insertion of pins for locking the parts to each other. These ties may be used to connect beams placed end to end, and also to connect beams placed side by side.

The invention is illustrated in the accompanying drawing, in which—

Figs. 1 to 3 are side elevations of three beams of the kind which I use,

Figs. 4 to 6 being cross sections of Figs. 1 to 3 on the line A—B showing also portions of slabs or boards which may be engaged with longitudinal grooves in the beams.

Figs. 7 to 9 are cross sections on the line C—D of Figs. 1 to 3, and Fig. 9^a is a similar cross section showing a modification.

Figs. 10 and 11 show one of the connecting members or ties, in side view and plan respectively.

Figs. 12 to 14 illustrate the method of joining beams end to end, Fig. 14 being partly in section.

Figs. 15 and 16 show in side view and plan part of a structure in imitation of a lattice girder.

Fig. 17 is a cross section through a part of the structure of Figs. 15 and 16.

Fig. 18 is a cross section of a modified form of the structure of Figs. 15 and 16, a board *c* in lieu of a diagonal tie *i* being used with the beam *a'*; and

Fig. 19 is a cross section through a beam with a modified form of groove.

Each of the beams *a* has in each of its end faces two cross grooves *d*, so that each end portion of a beam consists of four bosses *e*, square in cross section. The grooves *d*

are adapted to receive tongues *f'* formed on connecting members or ties *f*. The side faces of the beams *a* have grooves *b* for engaging boards or slabs *c*. The tongues *f'* and bosses *e* have holes for metal pins *g* provided with eyes, there being in each boss *e* two holes, so that pins *g* can be inserted crosswise, as shown in Figs. 7, 8 and 9. Fig. 9^a shows the two holes in each boss *e* so placed, that their axes are in the same plane; in this case shorter pins *g* must be used, if it is desired to insert pins into both holes of each boss.

The connecting members or ties *f* are of such width that they can be used not only for connecting beams placed parallel with each other, but also for connecting beams placed end to end, as shown in Figs. 12, 13 and 14, the width of the tongues being equal to twice the length of the bosses *e*. Hence a tie may be connected to two or four beams disposed laterally thereof, and four ties may connect together ten beams, namely five pairs of beams. That is to say, ten beams *a* (five at each side) laid end to end may be interconnected by four ties *f*. Fillers *h* are provided for insertion into such of the grooves as are not used for receiving tongues *f'*. These fillers may be portions of brackets or the like, for example brackets forming supports for window frames, arches or the like.

The connecting members *f* may be used as abutments for beams or the like, or for supporting projecting structures. Some of these members may, for example, be used to support pillars at their free ends, and such pillars may be of half the thickness of the beams *a* with a longitudinal groove on one side only.

For imitating structures of iron and wood I may use beams *a'* (Figs. 15 to 18) somewhat similar to the beams *a* but terminating at each end in only two bosses of square cross section, with a groove between them. Hence the smaller sides of such beams are equal in width to the bosses, and the larger sides are equal in width to two bosses plus the width of the groove. One of the larger sides has a longitudinal groove, the other is plain. As shown in Figs. 17 and 18 the longitudinal groove is stepped and consists of two portions *b'* and *b''*. The full width of the groove may be used to receive the end portion of a diagonal tie *i* (Figs. 15 and 17), or alternatively the deeper portion *b''* alone may be used to receive the edge of a slab *c* (Fig. 18). The deeper portion *b''* need not neces-

sarily be at one side of the groove, it may be more or, less central, with a shallower part at each side of it.

5 In Fig. 19 the groove b^2 is located in the middle of the groove b' . In other respects the arrangement of Fig. 19 is like that of Fig. 18, in that a board c is inserted into the groove b^2 , as a filler.

10 What I claim as my invention and desire to secure by Letters Patent of the United States is:—

1. In a toy building set the combination of a beam having in an end face thereof two transverse slots placed crosswise, and having 15 transverse pin holes in the parts separated by said slots, and a tie bar having a tongue adapted to engage either of said slots, the width of the tongue exceeding the depth of the transverse slot, and the tongue having 20 two pin holes, one of which is adapted to register with the pin holes in the beam, and the other of which is outside the slot when the tongue engages same.

2. In a toy building set the combination of a beam having a longitudinal slot, the 25 slot having two parallel portions of different depths, all upright walls of the slot being parallel and perpendicular to the bottom thereof, a tie member whose thickness equals the width of said slot, and a slab whose 30 thickness equals the width of the deeper portion of said slot.

3. In a toy building set, the combination 35 with a beam having a plurality of bosses at its end, each boss having bores therein in the same plane, tongues projecting between said bosses and having bores designed to register with the bores in the bosses, and pins insertible in said bores, each pin extending entirely through a bore in one boss 40 and a bore in one tongue and but partly through a bore in the opposite boss.

In testimony whereof I hereunto affix my signature.

OTTO HERMANN STRUB.