Sept. 2, 1958 B. JÖRGENSEN 2,849,832

TOY BUILDING SETS

Filed Jan. 26, 1956

Fig. 1.

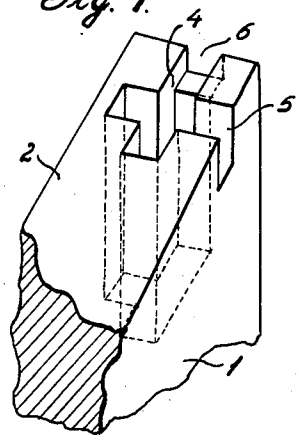


Fig. 2.

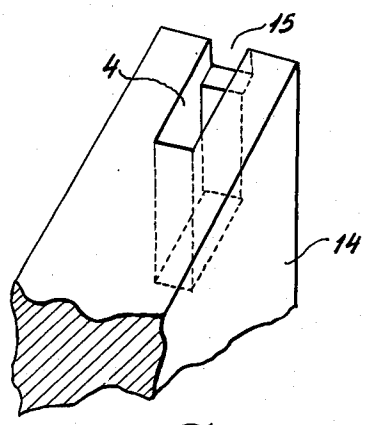


Fig. 3.

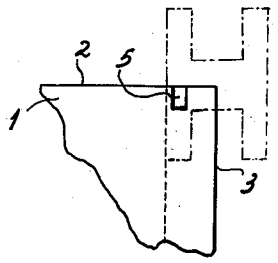


Fig. 6.

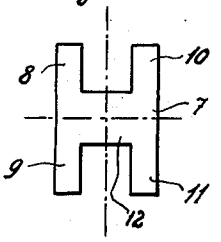


Fig. 5.

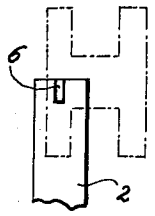


Fig. 4.

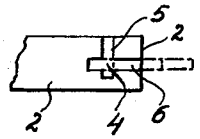


Fig. 7

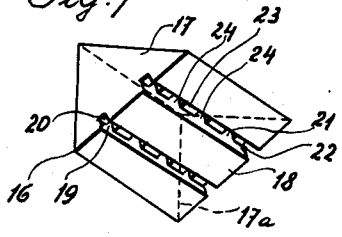
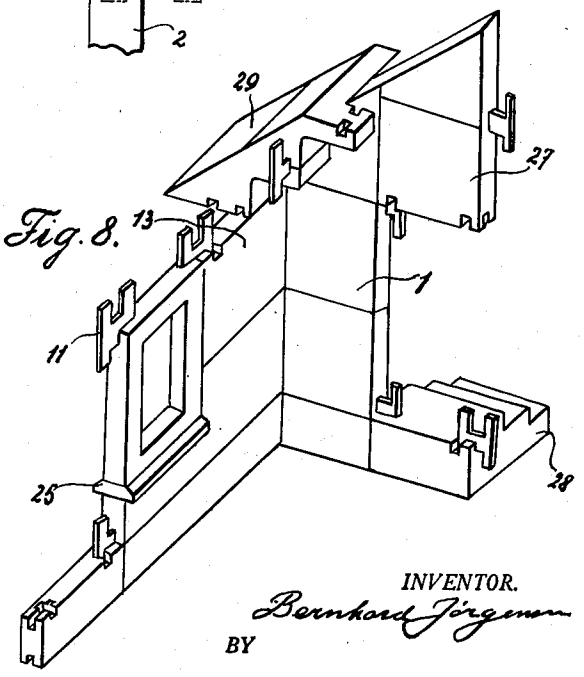


Fig. 8.



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TOY BUILDING SETS

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1 Claim. (Cl. 46—26)

The present invention relates to a toy building set of the type comprising a plurality of variously shaped elements or blocks which are provided with mortises, and which are interconnected by means of a detachable tie member provided with tenons engaging the said mortises.

Blocks for constructing toy buildings, and tie members for the assembly of the blocks are already known in numerous types. Common to them all is the fact that special tie members are required for the various shaped blocks constituting a building. Another disadvantage of the known devices is the fact that a relatively large number of tie members is required for assembling more complicated building constructions, for instance in buildings provided with a number of partition walls, doors, windows, door steps, window sills, and roof constructions.

The object of the invention is to provide a toy building set comprising block members and tie members in which the aforesaid drawbacks are eliminated.

Another object of the invention is to provide building blocks and tie members so constructed that any building block can be assembled to any other building block in elongation thereof or at a right angle thereto by means of a tie member of the same shape and size.

These and other objects of the invention will be apparent from the following description taken in conjunction with the accompanying drawing, in which—

Fig. 1 is a fragment of a flat building element provided with a mortise recessed to the one end and the one side of the element.

Fig. 2 is a similar fragment of a flat building element provided with a mortise recessed to the one end of the element only,

Figs. 3, 4 and 5 show the one corner of a flat element corresponding to that shown in Fig. 1, seen from one side, from above, and from one edge respectively,

Fig. 6 is a front view of a tie element,

Fig. 7 is a perspective view of a triangular building element, and

Fig. 8 shows in perspective a number of variously shaped building elements constituting one corner of a building structure.

The fragmental building element **1** shown in Fig. 1 has generally rectangular shape, see Fig. 8. It has flat sides and flat edges **2** and is intended for the erection of walls. In one of the flat surfaces close to an adjacent perpendicular flat edge **3**, Fig. 3 the element has a perpendicular mortise **4**. The material of the element is cut away between the mortise and the one flat side, forming a recess **5**, and between the mortise and the flat edge **2** forming a recess **6**.

In Fig. 6 is shown a tie member **7** shaped as a flat H. This member has two pairs of parallel legs or tenons arranged in elongation of each other and numbered **8**, **9** and **10**, **11**. These pairs of legs are interconnected by means of a transverse bar **12**. Each leg has a length corresponding to the depth of the mortise **4**, reckoned from the base of the recess **5** or **6** to the base of the mortise.

The thickness of the legs corresponds to the width of the mortise **4** and the recess **5** or **6**. The transverse bar **12** has a total height corresponding to twice the depth of a recess **5** or **6**, and a length between the legs twice the length of a recess **5** or **6** reckoned from the outer edge of the element to the nearest edge of the mortise. The thickness of the bar is the same as that of the legs. The width of the legs is slightly greater than the width of the recesses **5** or **6**.

Thus, when a tie member **11** is inserted in a mortise **4**, its one leg will enter the mortise to the base thereof, and one quarter of the transverse bar will enter the recess **5** or **6**, thus leaving three quarters of the entire tie member projecting from the building element. By attaching a similar mortised and recessed building element as element **1** to each projecting quarter of the tie member and by inserting other tie members in a similar manner in the other mortises of the thus added elements, it is possible to erect a wall of any desired height and width. If all the tie members are inserted ni mortises **4** and recesses **6**, the wall obtained will be flat. If, however, a tie member is inserted in a mortise **4** and recess **5**, a wall projecting at a right angle from the first wall can be obtained. This is shown in Fig. 8, where element **1** projects at a right angle from element **13**.

Owing to the fact that the width of the legs of the tie element **11** is greater than the thickness of the legs, and of the recesses **5** or **6**, the cross section of the mortise shown in Fig. 1 will be that of a cross. The effect of this is that the leg inserted in the mortise **4** of Fig. 1 and engaging either recess **5** or **6** will be supported throughout its entire length, thereby ensuring a relatively rigid construction.

In Fig. 2 is shown a building element **14** similar to that shown in Fig. 1, but provided with a recess **15** to the element edge **2** only. This element can only be used for erecting a flat wall.

In Fig. 7 is shown another shape of the building element, which is used in e. g. the construction of a roof. The member is generally indicated by **16** and has flat end surface **17** at a right angle to another flat surface **18**. In this latter surface the mortise **19** is formed and recessed at **20** out to the flat end surface **17**. When inserting a tie member **11** in the mortise and recess, other building elements can be attached thereto in the same manner as described above, in elongation of the element as well as in continuation of surface **18**. Providing the end **17***a* of element **16** indicated by dotted lines and opposite to end **17** is parallel to this end, a mortise **21** and recess **22** may be provided adjacent end **17***a*. In the building element shown in Fig. 7 the recesses **20** and **22** are interconnected by a rectilinear groove **23** which in its base is provided with a number of mortises **24** spaced a distance corresponding to the spacing of the legs of the tie member **11**. Two such mortises **24** and the adjacent parts of groove **23** will engage one half of a tie member and are used to interconnect two members which are not intended to be attached by their ends to other members, see e. g. the window sill **25**, Fig. 8.

It will be understood that the elements may have any shape suitable for the purpose to which they are to be put. In Fig. 8, **28** indicates a door step between which and an overlying wall part **27** a door may be inserted. **26** is a window, and **29** is an element constituting a part of the roof.

I claim:

A toy building set comprising construction blocks and tie members for joining the blocks by means of hidden mortise-and-tenon type of joint, in which each tie member comprises a flat rigid and substantially rectangular blank having two opposed end edges each cut out to the

same depth, leaving along each side edge of said blank two tenons in alignment with each other, each tenon having the same length and width as the other tenons and in which each block has close to at least one surface thereof a mortise having a depth equal to one half of the total length of the blank longitudinatlly of the tenons, a width equal to the thickness of the blank and between the mortise and at least one surface of the block a wall having a thickness equal to one half the width of the blank between two interspaced tenons, and recessed at its upper end to a depth equal to one half the length of the blank portion between the bases of the aforesaid cut out portions.

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