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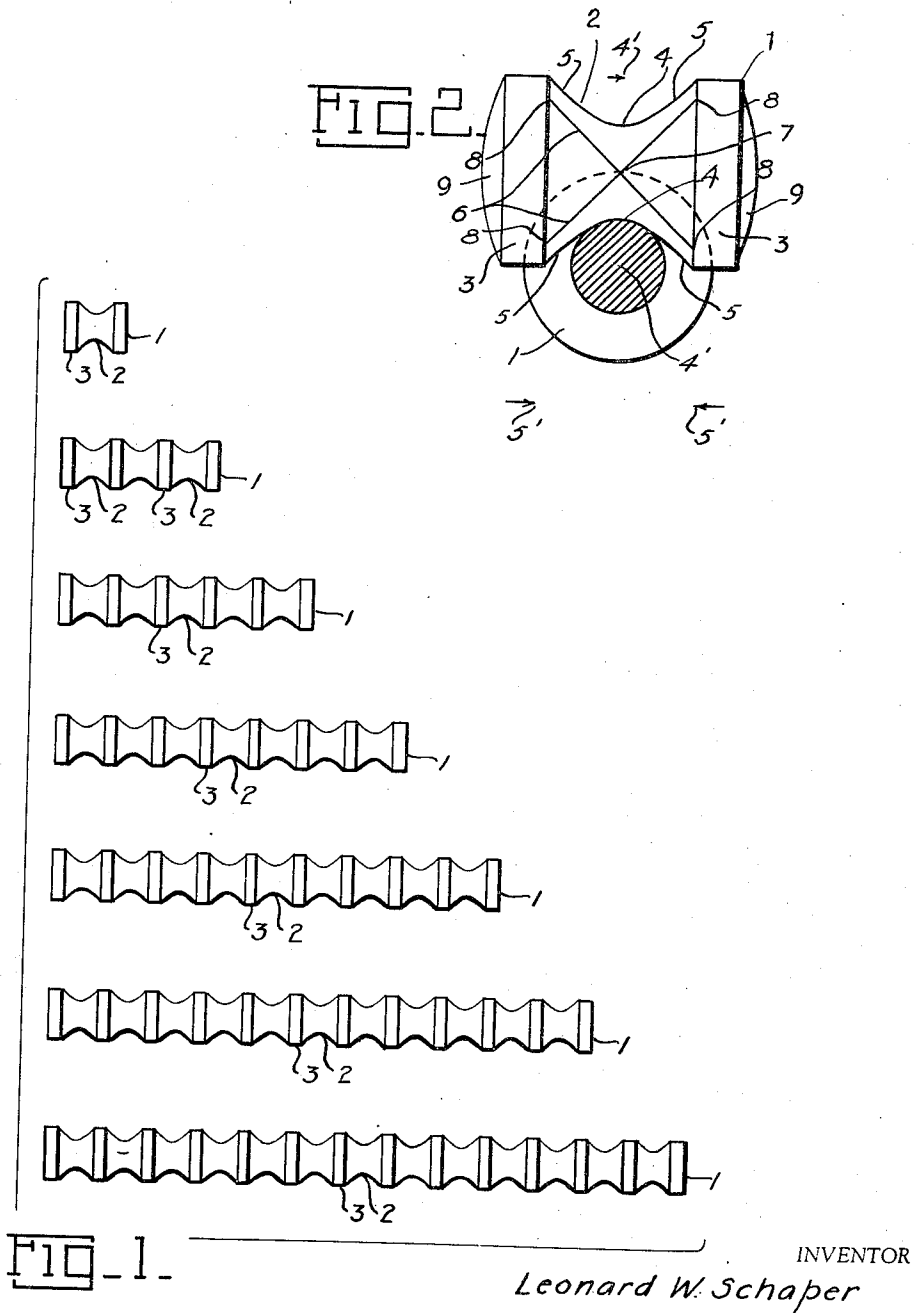
L. W. SCHAPER

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TOY BUILDING CONSTRUCTION SET

Filed Aug. 30, 1949

2 Sheets-Sheet 1



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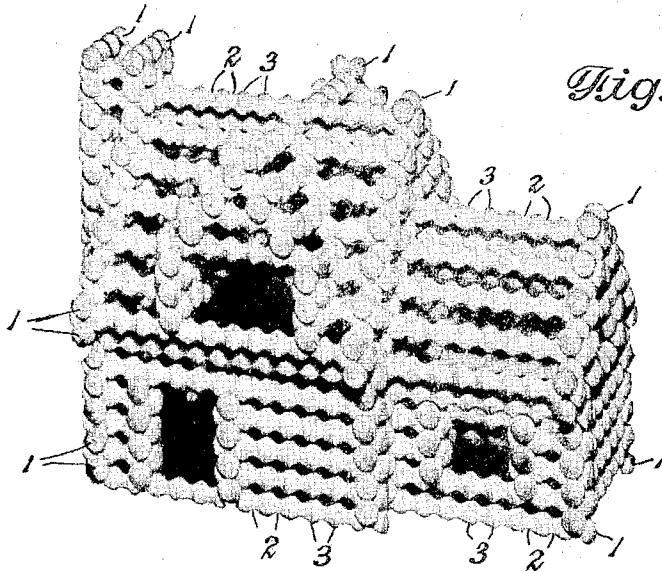
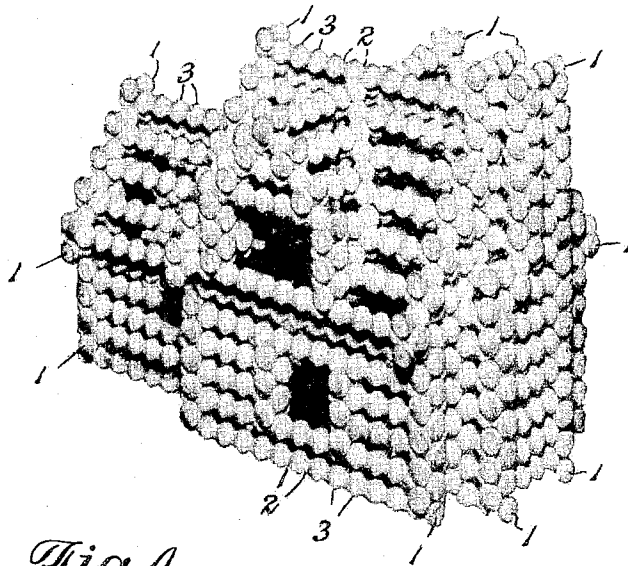
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2 Sheets-Sheet 2



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TOY BUILDING CONSTRUCTION SET

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Application August 30, 1949, Serial No. 113,039

2 Claims. (Cl. 46—28)

The invention relates to toy building construction sets comprising a plurality of units simulating miniature logs. An object of the invention is to provide such a set, the logs of which are provided with annular duplicate transverse grooves the side walls of which are diverging, said grooves being of such form that structures built with said logs will be firm and solid, the right angularly relation of the groove engaged logs securely maintained and alignment insured in square cornered structures.

The invention consists in the novel construction and combinations of parts as hereinafter set forth in the claims.

In the accompanying drawings,

Figure 1 is a side view of the preferred seven individual units or logs of progressively increasing number of annular grooves and progressively increasing length.

Figure 2 is a side view of the shortest log of the set and a crosswise arranged unit in section groove-engaged therewith.

Figure 3 is a perspective view of a miniature house built from these logs.

Figure 4 is a view similar to Fig. 3, taken from another angle.

In these drawings, the numeral 1 designates the units simulating miniature logs, of different lengths, and of which there may be 201 logs to the set comprising a number of duplicates of each of the different length logs.

The different length logs 1 of the set are all of the same diameter and have each a plurality of equally spaced annular mating grooves 2 of equal depth, the side walls of which form equally spaced annular ridges 3, with exception of the shortest log which has one annular groove only, there being an annular ridge 3 at each end of each log adjacent an annular groove 2 thereof.

Any one of the mating grooves 2 of any log of the set arranged crosswise or at right angles to another log of the set is engageable with the mating groove of said other log to form a joint.

The different length logs of the set have a progressively increasing number of annular grooves 2 and annular ridges 3 and are consequently of progressively increasing length.

A number of duplicates are provided for each of the different length logs of the set, making up a variable total number, which may be 201.

In order that the structure built of these logs shall be firm and solid, with the right angular relation of the groove-engaged logs securely maintained and alignment insured in square cornered structures, the mating grooves 2 of each of the logs 1 are respectively composed of elements having an inner arcuate portion 4, struck from a center 4', of one radius length and diverging arcuate side portions 5 struck from centers 5' of a longer radius length so that the abutting surfaces of the engaged grooves of the crosswise arranged logs shall contact along lines 6, shown diagrammatically in Fig. 2, crossing each other at right angles at 7 at the lowermost parts of the grooves and terminating at 8 at the

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outermost parts of the grooves in opposite four point spaced relation to make the joint rigid.

The mating grooves 2 being annular and equally spaced, the logs 1 may be groove engaged without need for extra manipulation thereof, as would be the case were the grooves other than annular and equally spaced.

The mating grooves 2 being annular and equally spaced makes it possible to build a greater variety of different structures from the same number of logs, inasmuch as for any one log of the set there is a greater number of groove-joint engagements possible with any other log.

In order to obtain a rigid joint effect with grooves of arcuate form, a compound arc must be used. Using stock of $\frac{3}{8}$ inch diameter, the width of the groove should be .310 inch, and the depth of the groove should be .093 inch, to obtain which the elements of which each groove is composed should have for the inner arcuate portion 4 thereof a radius length of $\frac{3}{32}$ inch struck from center 4', and for the diverging arcuate side portions 5 thereof a radius length of $\frac{1}{16}$ inch struck from centers 5'. The spacings for the grooves will be $\frac{3}{8}$ inch. These figures will vary with the diameter of the stock used, in due proportion.

While it is preferred to use seven different length logs of progressively increasing number of annular grooves and progressively increasing length, there may be more or less than seven different length logs, and the different length logs may progressively increase in length to the extent of more or less than two annular grooves without departing from the spirit of the invention. Thus, if there were more than seven different length logs, the length of the longest log would be increased and if there were less than seven, the length of the longest log would be decreased. Thus also the number of grooves would vary.

The compound arcuate groove of applicant facilitates the groove joint engagements and disengagements of the logs, which logs will fall and adjust themselves to position without need for straight downward movement thereof for this purpose, thus making it easier for children to build with them. It is preferred that the logs 1 be provided with rounded ends, as shown at 9 in Fig. 2.

I claim:

1. In a toy building construction set, a plurality of units of circular form in cross section simulating miniature logs having annular mating grooves of equal depth, a mating groove of any log of the set arranged at right angles to another log of the set being engageable with a mating groove of said other log to form a joint, each mating groove having a depth of substantially one fourth of the log diameter and having a bottom arcuate portion of a radius substantially equal to said depth and diverging arcuate side portions having a longer radius of such length that the abutting surfaces of the engaged grooves of the logs contact along lines crossing each other at right angles at the innermost parts of the grooves and terminating at the outermost parts of the grooves in opposite four point spaced relation to make the joint rigid.

2. A toy building construction set, comprising a plurality of logs of circular form in cross section, said logs having a plurality of annular duplicate transverse grooves the side walls of which are diverging, an annular groove of any one log disposed horizontally at right angles to another horizontally disposed log being engageable by gravity with an annular groove of said other log to form a joint, each groove having a depth of substantially one fourth of the log diameter and a bottom wall of arcuate form in longitudinal section the radius of which substantially equals said depth, the diverging side walls of the grooves being of arcuate form in longitudinal section the radius of which is longer than that of said

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bottom wall and of such length that the abutting surfaces of the engaged grooves of the logs contact along lines crossing at right angles at the innermost parts of the grooves and terminating at the outermost parts of the grooves in opposite four point spaced relation.

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