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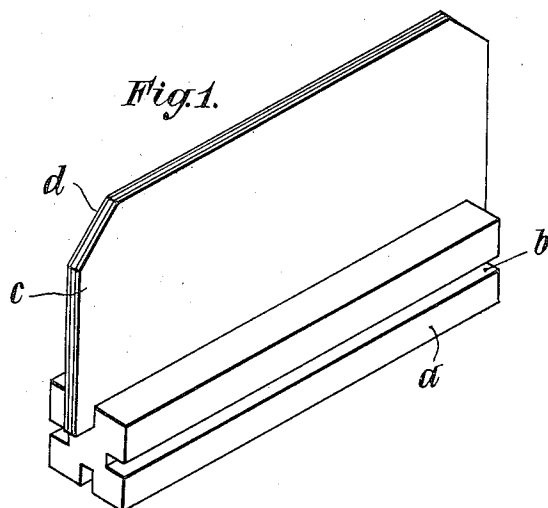
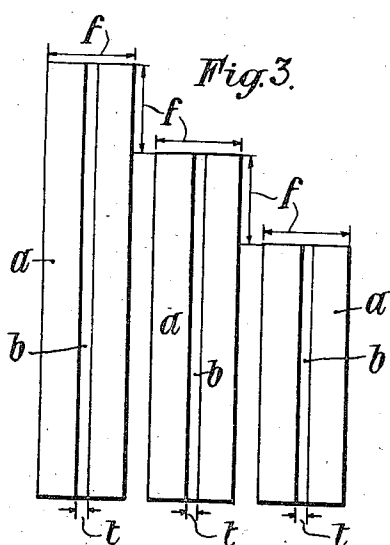
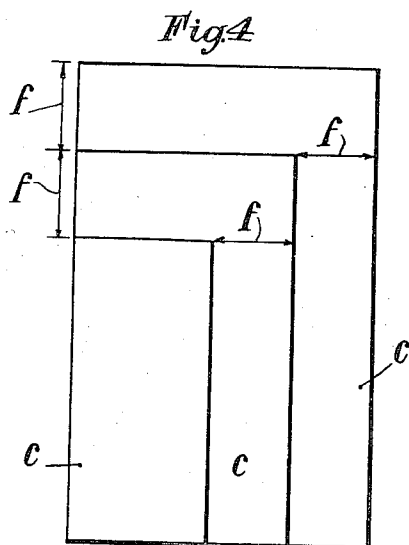
R. OGDEN

2,031,848

CONSTRUCTIONAL TOY

Filed Oct. 24, 1934

2 Sheets-Sheet 1



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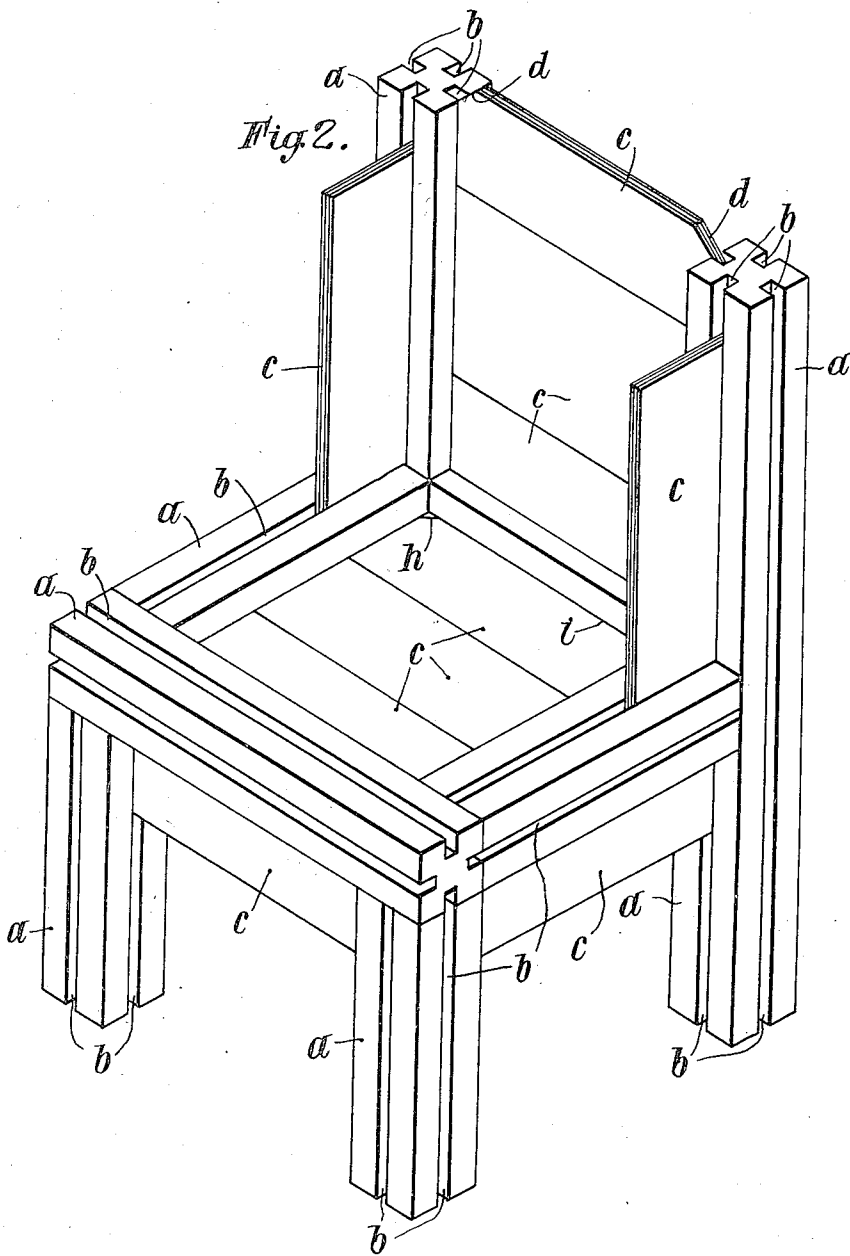
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2 Sheets-Sheet 2



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UNITED STATES PATENT OFFICE

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CONSTRUCTIONAL TOY

Ronald Ogden, Slough, England

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In Great Britain October 28, 1933

2 Claims. (Cl. 46—31)

This invention relates to constructional toys.

In accordance with this invention I provide a toy construction set comprising flat ended struts having a symmetrical cross-section provided for the whole length of their faces with similar grooves of cross-section substantially rectangular and panels of any symmetrical shape about an axis adapted to fit the grooves of the struts, all dimensions being based upon the width of the strut face in such a manner that the strut lengths, panel lengths and panel widths are each arranged in co-related arithmetical progressions having the width of the strut face as common difference, the panels and struts being designed in pairs in each of which the panel length exceeds that of the strut by twice the depth of the groove.

The flat ends are formed either at right-angles to the strut faces or at an angle with two opposite faces, opposite ends of a strut being dissimilar in this respect, if desired.

The panels are adapted to fit firmly into the grooves of the struts.

The panels may be of any symmetrical shape, for example, rectangular, triangular, etc. being adapted, by size or shape or both, to fit the grooves of three or more struts simultaneously in such a manner that, on assembly, the toy remains assembled and retains its shape, by virtue of the fit alone and without the use of pins, clips, or other extraneous devices. The struts and panels are of wood or other suitable material.

Referring to the drawings filed herewith which illustrate one form of device made in accordance with this invention,

Fig. 1 is an isometric drawing of a strut, fitted with a panel.

Fig. 2 is an isometric drawing of a model chair constructed with struts and panels made in accordance with this invention.

Fig. 3 illustrates in plan a series of struts made in accordance with this invention and

Fig. 4 a series of panels adapted to coact therewith in accordance with this invention.

Referring to Fig. 1, the strut *a* has rectangular grooves *b* extending throughout the length of all its faces and located centrally within them. The groove is adapted to fit the panel *c*.

For the purpose of panelling at right-angles to a strut, at some point intermediate between its ends, as at *h* in Fig. 3 in the case of the strut *i*, the corner of some or all of the panels may be cut away at 45 degrees as shown at *d* in Fig. 1.

The cut is made at a point not less than twice the depth of the strut groove from the original

corner and, for symmetry and interchangeability, both corners of one long side of the panel are similarly treated.

In carrying this invention into effect all dimensions are based upon the width of strut-face *f* in such a manner that the strut lengths, panel lengths and panel widths are each arranged to form an arithmetical progression having *f* as common difference.

The first term of the arithmetical series of strut lengths may be *f* but is preferably equal to four times the width *f*.

The depth of the groove may theoretically be a fraction of *f* not exceeding $(.5f - t)$ (where *t* equals the width of the groove and is also a fraction of *f*, say *f*/6) but is preferably *f*/4.

The first term in the series of panel lengths is equal to the length of the shortest strut plus twice the depth of the groove.

The first term in the series of panel widths may be equal to twice the depth of the groove but is preferably equal to *f* plus twice the depth of the groove.

The series in practice need not be continuous, values which are multiples of other being sometimes dispensable.

The limits of all series may be extended as desired.

By way of example, the three co-related series may be as follows:—

For struts:

$4f, 5f, 6f, 7f, 8f, 10f, 12f.$

For panel lengths:

$4.5f, 5.5f, 6.5f, 7.5f, 8.5f.$

For panel widths:

$1.5f, 2.5f, 3.5f.$

It is to be understood that the dimensions referred to in the above description and in the following claims are to be taken in the practical sense, that is they are not to be departed from more than to give practical effect to the fit of the parts described.

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

1. A toy construction set comprising flat ended struts having a symmetrical cross section provided for the whole length of their faces with similar grooves of cross section substantially rectangular and panels adapted to fit the grooves of the struts, the panels and struts being designed in pairs in each of which the panel length exceeds that of the strut by twice the depth of the groove.

2. A toy construction set comprising flat ended struts having a symmetrical cross section pro-

vided for the whole length of their faces with similar grooves of cross section substantially rectangular and panels adapted to fit the grooves of the struts, the struts being arranged in spaced relation with a plurality of panels between the struts in each of which the panel length exceeds

that of the strut by twice the depth of the groove, and in which the combined widths of the panels exceed the strut length by twice the depth of the groove.

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