June 9, 1925. 1,541,556

C. D. FISHER

TOY BUILDING BLOCK

Original Filed May 22, 1922 2 Sheets-Sheet 1

Fig.1.

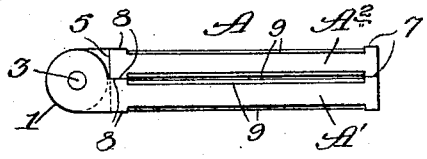


Fig.2.

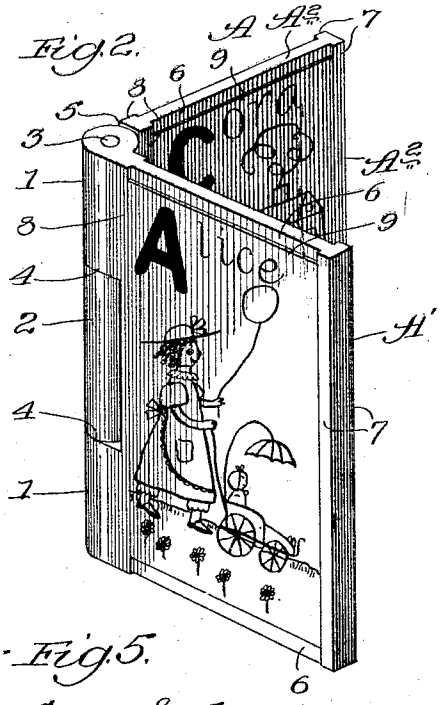


Fig.3.

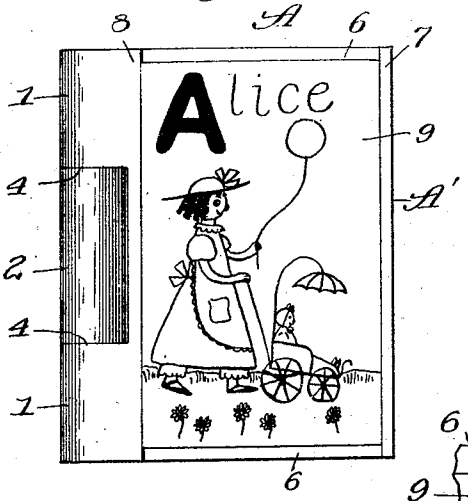


Fig.5.

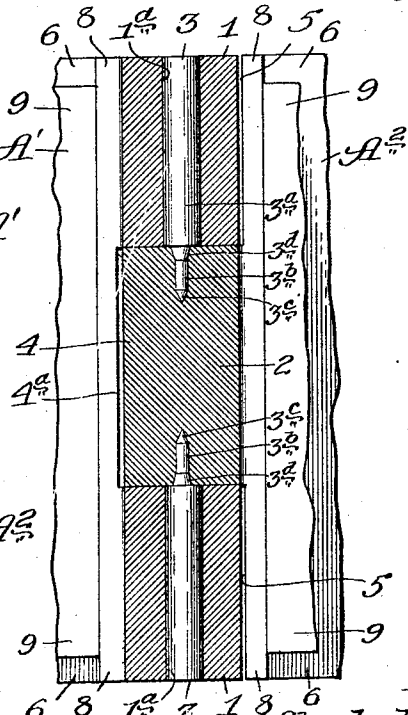


Fig.4.

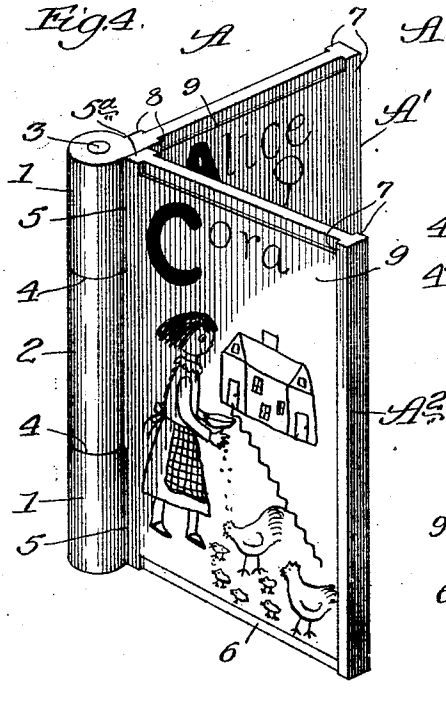
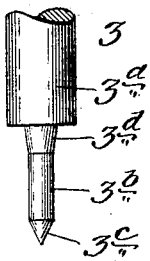


Fig.6.



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Fig. 7.

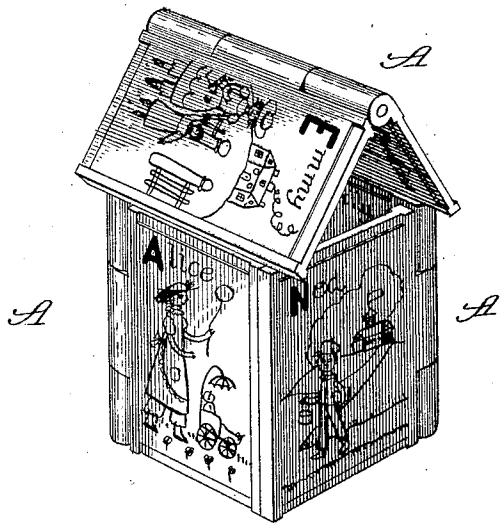
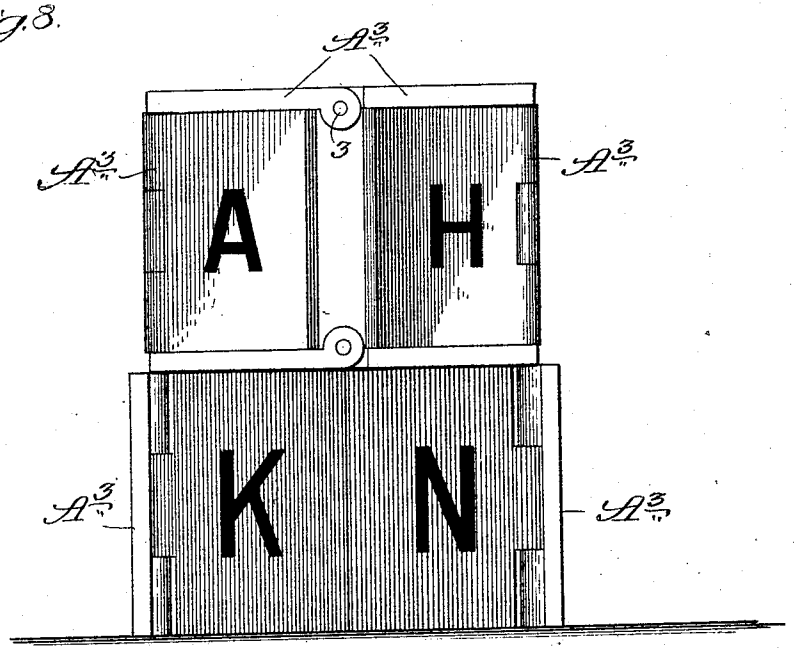


Fig. 8.



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Attys.

Patented June 9, 1925. 1,541,556

UNITED STATES PATENT OFFICE.

CHARLES DOUGLAS FISHER, OF NEW ROCHELLE, NEW YORK, ASSIGNOR TO THE TOY KROFTERS, INC., OF BEACON, NEW YORK, A CORPORATION OF NEW YORK.

TOY BUILDING BLOCK.

Continuation of application Serial No. 562,662, filed May 22, 1922. This application filed April 6, 1923. Serial No. 630,273.

To all whom it may concern:

Be it known that I, CHARLES DOUGLAS FISHER, a citizen of the United States, residing at New Rochelle, in the county of Westchester and State of New York, have invented a new and useful Improvement in Toy Building Blocks, of which the following is a specification.

This invention relates particularly to a toy book, or a book-form building-block; and the primary object is to provide a device of this character which will serve as a book for a child, and which may be employed advantageously in the building of toy structures of various kinds.

The invention is illustrated in its preferred embodiment in the accompanying drawings in which—

Fig. 1 represents an end view of a book-form building block with leaves closed together; Fig. 2, a perspective view showing the two leaves of the book partially open; Fig. 3, an elevational view of the device; Fig. 4, a perspective view showing the leaves opened through an angle of 270°, so that the leaves stand at an angle of 90° with relation to each other; Fig. 5, a broken sectional view, the section being taken through the hinge portions of the leaves; Fig. 6, a broken view of a pintle-pin employed; Fig. 7, a perspective view of a toy house constructed from the toy books with the leaves of the several books opened at an angle of 90°; and Fig. 8, an elevational view of another structure built from toy books of slightly modified form.

In the preferred construction illustrated in Figs. 1 to 7 inclusive, the book-form block designated A comprises a pair of stiff, thick leaves A′ and A², preferably composed of wood, the leaf A′ being provided with barrel-form hinge portions 1, and the leaf A² being provided with an intermediate barrel-form hinge portion 2. The hinge portions of the two leaves are connected together preferably by means of two separate pintle-pins 3. The hinge-connections between the leaves should be such as to cause the leaves to remain at any angle with relation to each other at which they may be placed, but the connections should not be so stiff as to prevent a child from moving the leaves with comparative ease. To accomplish this result, it is necessary that the hinge-connections should be made to operate with considerable friction. This is best accomplished by the construction illustrated in Figs. 5 and 6. To this end, the barrel-portions 1 of the leaf A′ have perforations 1^a bored therethrough. Into these perforations are forced the pintle-pins 3. These pins have the enlarged portions 3^a which fit snugly in the bores 1^a and have reduced portions 3^b which are forced into the wood of the barrel-portion 2 of the leaf A². The reduced portions 3^b are provided with taper points 3^c and are provided adjacent to their junction with the enlarged portions 3^a with frusto-conical portions 3^d.

In assembling the leaves, the pins 3 are forced through the bores 1^a so as to be secured against rotation therein, and the reduced inner ends of the pins are forced into the wooden body of the barrel portion 2 of the leaf A². With such an arrangement, the leaves may be placed at any angle with relation to each other and the device may be rested on the longitudinal edges of the leaves, for example, without collapsing. This enables the book-form building block to be used in various situations without collapsing. It is desirable that the leaves be formed of wood or fibrous material and that the leaves be of considerable thickness. In fact, it is preferred to have the leaves of such thickness that the book will stand on one end, or will stand upon the free edges of the leaves when the book is closed.

When the thick leaves of the book are made of wood, it is convenient to form the leaves by first running a long strip of wood through a planing machine and planing it to the desired form, that is, giving to the strip the cross-sectional shape of the leaf. The strip may then be cut into suitable lengths to form the leaves; and the hinge portions of the leaves may then be provided by suitable mortising operations. It is preferred to provide one of the leaves of the book with a central mortise 4 and to provide the other with end mortises 5, thus forming the hinge portions 1 of the leaf A′ and the hinge portion 2 of the leaf A². The hinge portions thus formed are complemental with respect to each other, and when the hinge-portions are united by the pintle-

pins, the hinge portions provide a rounded back which extends the full length of the book.

It will be understood from Fig. 1 that the axes of the hinge portions of the leaves lie in a plane between the planes of the leaves. In other words, the hinge-portions are offset with respect to planes of the leaves, so that the hinge-portions are in axial alignment with each other. It will be noted that the mortises 4 and 5 provide shoulders adjacent the hinge portions, and these shoulders of one leaf will strike against the other leaf when the leaves are opened through an angle of 270°. Thus in Fig. 4, the numerals 5 which indicate the mortises of the leaf A^2 afford shoulders 5^a which abut against the leaf A′ in the position of the leaves there shown. In a similar manner, the central mortise 4 of the leaf A′ affords a shoulder 4^a which bears against the leaf A^2 in the position shown in Fig. 4, the shoulder 4^a being hidden in that view, however.

In planing a strip from which the leaves can be formed, it is preferred to provide the strip on both sides with a shallow longitudinal recess 6 which is of a width only a little less than the width of the leaf. Thus, the main surfaces of the leaf are sunken or depressed surfaces bounded at the lateral edges by higher surfaces or flanges 7 and 8. It is preferred to paste on the depressed main surfaces of the wooden leaves printed paper sheets 9 applied like a label. The sheets 9 may be gummed on their inner surfaces and may have printed on their outer surfaces letters, numerals, pictures or the like. For example, a series of nursery rhymes and associated illustrative pictures may be printed on the sheets. The surfaces of the leaves may be thus decorated in any desired manner.

Fig. 7 illustrates a small structure or toy house formed by setting two of the books upright with the leaves open at an angle of 90° and forming a peripheral wall, this wall being surmounted by another book in partially open condition, forming the roof.

Fig. 8 illustrates another structure formed of book-form blocks A^3. In this modified form the leaves of the book are put together in the manner already described. The shallow depressions which form the main surfaces of the two sides of each leaf are omitted in this case, and the leaves are shown as having printed directly on the wood letters of the alphabet. Such an arrangement is suitable for a very young child, and is less expensive than the more elaborate device described above. It is to be remarked however, that no additional expense is incurred in producing the depressed surfaces 6; and this expedient serves to protect the printed matter or ornamentation. For example, the flanges 7 and 8 protect the printed sheets 9, the lateral surfaces of the flanges preferably projecting slightly above the outer surfaces of the sheets 9.

It is advantageous to provide the book-form blocks as a library set. For example, there may be a library set comprising several books provided with illustrated Mother Goose rhymes; and the backs of the series of books forming such a child's library may bear the letters spelling the name Mother Goose. Other ways of making the book-form blocks attractive to children will readily suggest themselves.

If desired, the leaves may be pressed from a composition comprising fibrous material and a suitable binder. In any case, the leaves should be thick and stiff enough to enable them to be used in the manner described. The leaves are preferably imperforate, as illustrated.

It will be understood from Fig. 2, for example that the book-form building-block closely simulates the appearance of an ordinary book. In one sense, it may be regarded as a book comprising two thick, stiff leaves equipped with rigid hinge portions which form the rounded back of the book, the hinge portions being rather stiffly hinged together by a suitable pintle, or pintles, affording sufficient friction to cause the leaves to remain at any angle at which they may be placed, and the surfaces of the leaves being suitably printed or decorated. Experience has demonstrated that the form of hinge construction illustrated in Fig. 5 is well adapted to the purpose. Such a hinge construction enables the leaves to be opened and closed many thousands of times without working loose.

The present application constitutes a continuance of application No. 562,662, filed May 22, 1922.

The detailed description has been given for clearness of understanding only, and no unnecessary limitations should be understood therefrom, but the appended claims should be construed as broadly as permissible in view of the prior art.

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

1. A toy book adapted to serve as a building block and comprising two substantially flat, thick stiff leaves having complemental offset barrel-portions connected by a pivot, said barrel-portions forming the back of the toy book, said leaves having printed matter thereon and said parts being constructed, combined and arranged to serve as a building-block.

2. A toy book adapted to serve as a building block and comprising two substantially flat, thick stiff leaves having complemental barrel-portions forming the back of the book

and connected by a pivot, said leaves having their lateral surfaces depressed and flanked by marginal protecting flanges, said depressed surfaces having printed matter thereon and said parts being constructed, combined and arranged to serve as a building-block.

3. A toy book adapted to serve as a building block and comprising two substantially flat, thick stiff leaves having complemental barrel-portions forming the back of the book and connected by a pivot, said leaves having their lateral surfaces depressed and flanked by marginal protecting flanges, and sheets pasted on said depressed surfaces and bounded by said flanges, said parts being constructed, combined and arranged to serve as a building-block.

4. A toy book adapted to serve as a building block and comprising two substantially flat, thick stiff leaves having offset complemental barrel-portions extending the full length of and forming the back of the book, said barrel-portions being connected by a pivot, said leaves having their lateral surfaces depressed and flanked by marginal protecting flanges, and sheets pasted on said depressed surfaces and bounded by said flanges, said parts being constructed, combined and arranged to serve as a building-block.

5. A toy book adapted to serve as a building block and comprising two substantially flat, thick stiff leaves having complemental offset barrel-portions stiffly connected by a pivot, one of said leaves having shoulders at its rear edge adapted to engage the other leaf when the leaves are separated at an angle of 270° in the operation of opening the book, said leaves having printed matter thereon.

6. A toy book adapted to serve as a building block and comprising two substantially flat, thick stiff leaves having complemental off-set barrel-portions and having marginal portions with depressed flat surfaces between said marginal portions, said barrel-portions extending the full length of and forming the back of the toy book and being stiffly connected by a pivot.

7. A toy book adapted to serve as a building block and comprising substantially flat, thick stiff leaves provided with rigid barrel-portions simulating the back of a book, and pintle connections between said barrel portions providing friction and stiff working of the hinge.

8. A toy book adapted to serve as a building block and comprising two substantially flat, thick leaves having complemental offset barrel-portions stiffly connected together by a pivot, said barrel-portions forming the back of the toy book and said leaves bearing printed matter.

9. A toy book adapted to serve as a building block and comprising a pair of wooden leaves having complemental barrel portions connected by a pivot, the pivotal connections being such as to afford friction whereby the leaves will be held at any angle at which they may be set.

CHARLES DOUGLAS FISHER.