Aug. 10, 1965 W. H. FISCHER 3,199,246

TOY CONSTRUCTION ELEMENT HAVING RETAINING APERTURES

Filed May 9, 1963

FIG. 1

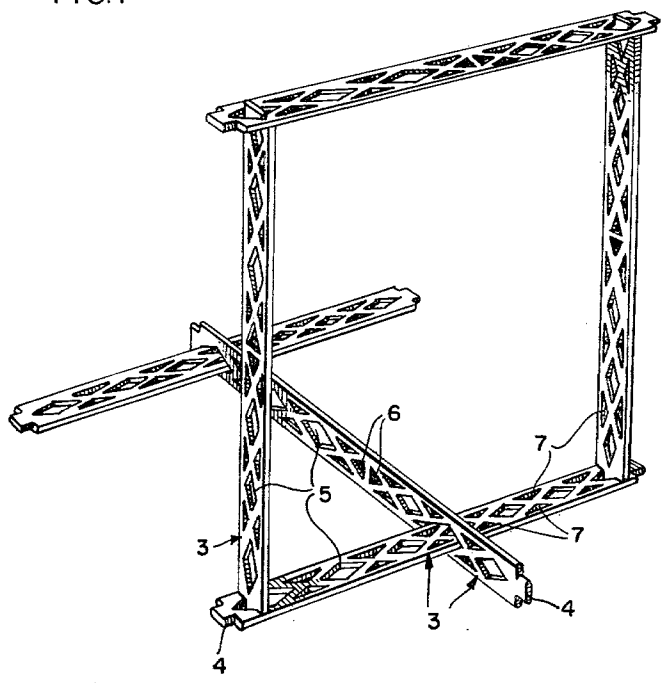
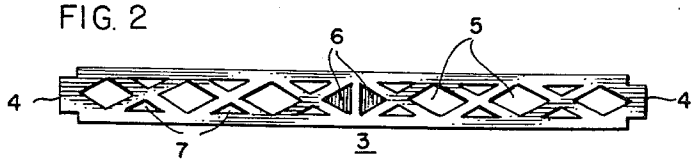


FIG. 2



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TOY CONSTRUCTION ELEMENT HAVING RETAINING APERTURES

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This invention relates to a perforate, molded plastic stick-like element, a plurality of which may be assembled in interlocking relationship to form various geometric configurations.

The main objects of this invention are: to provide an improved contoured and dimensioned toy construction element, a plurality of which may be assembled in interlocking relationship to form various geometric configurations; to provide an improved toy construction element of this kind in the form of a thin, flat, molded plastic strip having a longitudinal series of uniform openings dimensioned to permit one strip to be inserted into another and frictionally held in adjusted right-angle relationship; and to provide an improved toy construction element of this kind of such simple but unique form and design as to make the manufacture thereof extremely inexpensive and the use thereof so obviously extensive as to intrigue young people in the use thereof for discovering how wide and varied a range of geometric configurations their ingenuity can conceive and construct.

In the adaptation shown in the accompanying drawings:

FIGURE 1 is a perspective view of the beginning of a proposed geometric configuration erected with toy construction elements made in accordance with this invention; and

FIG. 2 is a plan view of one of these toy construction elements.

The essential concept of this invention involves a flat, comparatively thin, narrow and fairly short molded plastic strip having a series of longitudinally spaced openings, a plurality of which strips may be assembled to provide an almost unlimited variety of geometric configurations by successively inserting one strip into a selected opening in another strip for frictional retention in linearly-adjusted right-angle relationship.

A toy construction element embodying the foregoing concept comprises a strip or stick 3 of molded plastic material having co-planer end tongues 4, extending in the long or axial direction of the element, and a longitudinally extending series of primary openings 5. Although the respective dimension of such a strip 3 may vary, in the illustrated adaptation they are approximately as follows: length 4½", width ⅜", and thickness 3/32". The end tongues are approximately ¼" wide and ⅛" long.

The openings 5, as herein shown, are of quadrilateral form or diamond-shaped with long and short dimensions between opposite angles such as to snugly receive and frictionally hold the width of the strip 3 and the width of the end tongues 4, respectively. In this particular embodiment of the strip 3 there are six primary openings 5 arranged at opposite sides of a diamond-shaped medial reinforcing web 6, the area 6 being indented to carry on the design of the face surface of the strip 3 but being closed as compared with the primary openings 5. It will be understood that the shape of the primary openings 5 may be varied, so long as the dimensions thereof will snugly receive the width and thickness of the strip 3 and the width and thickness of the end tongues 4 as hereinafter described.

The plastic material from which the strip 3 is molded may be of any suitable composition that permits a fair degree of flexing before the strip will break.

As shown in the drawings the strip 3 is formed with a series of triangularly-shaped apertures 7, located on each side of the longitudinal centerline of the strip 3, between the primary openings 5, to contribute to the ornamental appearance of the construction elements. In the form shown these apertures 7 serve no function in the assembly of the elements 3.

From the configuration shown in FIGURE 1, it will be apparent when one strip 3 is inserted endwise and bodily through the longer dimension of a primary opening 5, that is, the distance between the acute angles of the diamond-shaped opening, the two strips 3 so connected are then disposed at right angles to each other with the plane of the inserted strip disposed parallel with the longitudinal dimension of the receiving strip. However, when the end tongue 4 on one strip is inserted to span the shorter dimension of an opening 5, that is, the distance between the obtuse angles, the plane of the inserting strip is disposed transversely of the receiving strip and normal to the plane of the face thereof. In such position the inserted strip is joined endwise to the face of the receiving strip. For either insertion the primary openings are so dimensioned that there is enough friction between the combined strip elements to yieldingly retain them in their assembled relationship.

Preferably, the openings 5 are so dimensioned that a slight pressure or force is required to pass either the strip 3 bodily through an opening 5, parallel with the long dimension thereof, or to insert the tongue 4 into an opening 5 parallel with the short dimension thereof, as illustrated in FIGURE 1. Thus when assembled, the strip elements are firmly secured together and fairly stable structures can be assembled therefrom. Also, with either manner of assembling the strips 3, there are as many different positions that one strip may be arranged on another as there are primary openings 5.

Particular advantages of this invention reside in the simplicity of the improved toy construction element and the many forms of structure than can be made from it; in the fact that the novel construction element can be molded readily and cheaply from any suitable plastic material; and in the fact that construction elements of other shapes and sizes and having like proportioned openings, such as shown at 5, can be made fully compatible for assembly with that of the present invention to extend the range and variety of structures that can be created through its use.

Although but one specific embodiment of this invention is herein shown and described, it will be understood that details of the construction elements shown may be altered or omitted without departing from the spirit of this invention as defined by the following claims.

I claim:

1. A toy construction element comprising a flat, narrow, elongate strip of uniform thickness terminating at each end in a single co-planar axially extending tongue of less width than the width of the strip, the width of the strip being otherwise uniform, said tongues being of equal width, and said strip having a plurality of longitudinally spaced opening means therethrough, each of said opening means being of a quadrilateral shape having at least two oblique opposing angles and a length in the longitudinal direction of the strip substantially equal to the width of the strip for snugly receiving and frictionally holding a like strip inserted endwise therethrough, and each of said opening means having a width transversely of the strip substantially equal to the width of the said tongues for receiving and frictionally holding the tongue of a like

strip disposed in a plane normal to the longitudinal centerline of the first mentioned strip.

2. A toy construction element comprising a flat, narrow, elongate strip of uniform thickness terminating at each end in a singular co-planar axially extending tongue of less width than the width of the strip, the width of the strip being otherwise uniform, said tongues being of equal width, and said strip having a plurality of longitudinally spaced opening means therethrough, each of said opening means being of greater length than width and being of a length in the longitudinal direction of the strip at least equal to the width of the strip and of a width adjacent its ends substantially equal to the thickness of the strip for snugly receiving and frictionally holding a like strip inserted endwise therethrough, and each of said opening means having a width intermediate its ends at least equal

to the width of said tongues for snugly receiving and frictionally holding the tongue of a like strip disposed in a plane normal to the plane of the face of the first mentioned strip.

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