Nov. 30, 1971 A. K. HICK 3,623,243

ARCHITECTURAL AND DESIGN AID

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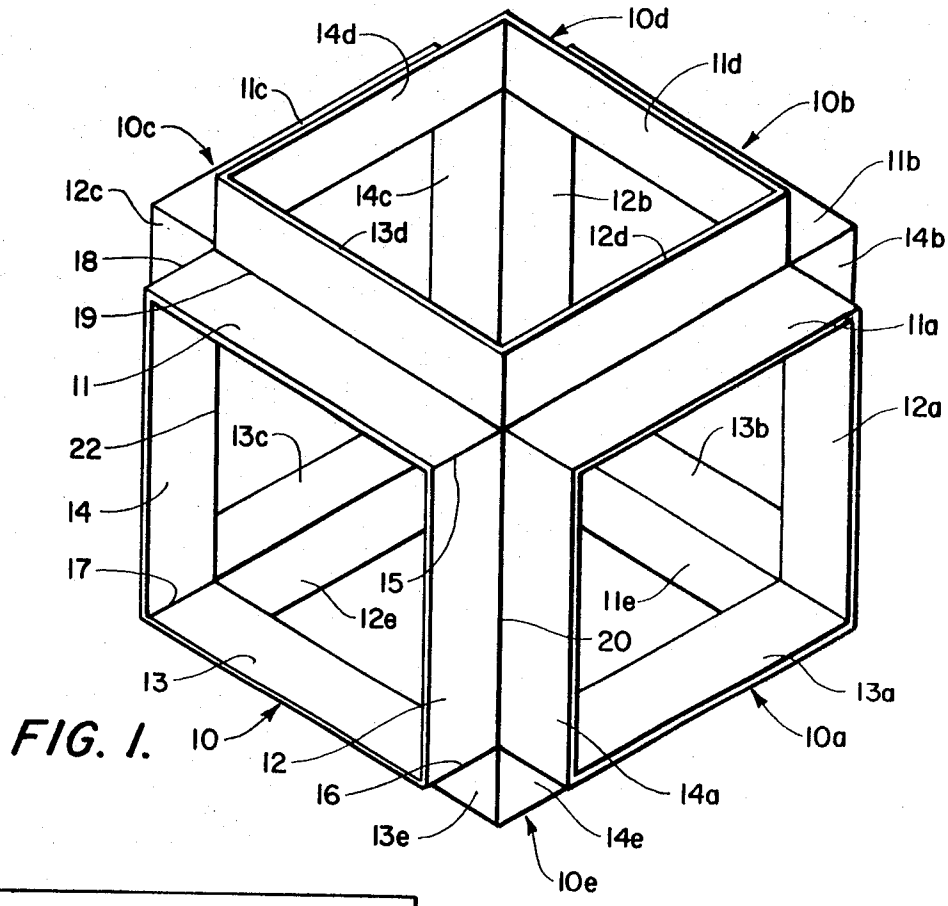


FIG. 1.

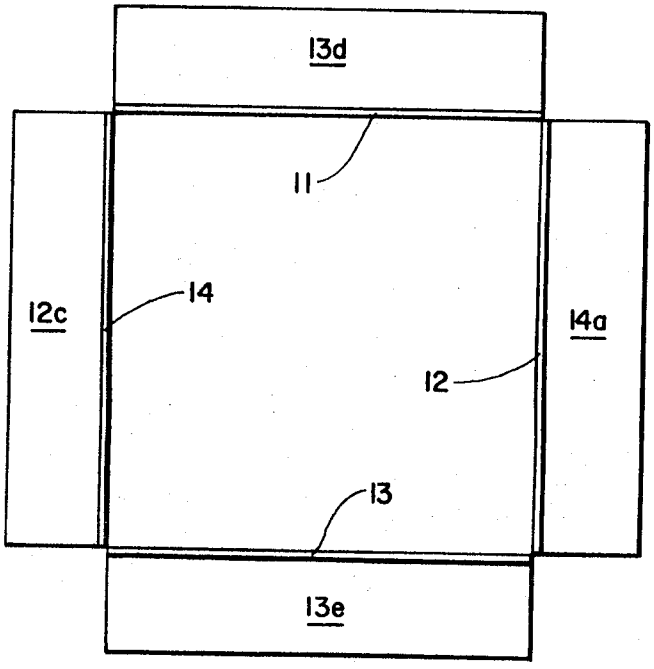


FIG. 2.

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FIG. 3.

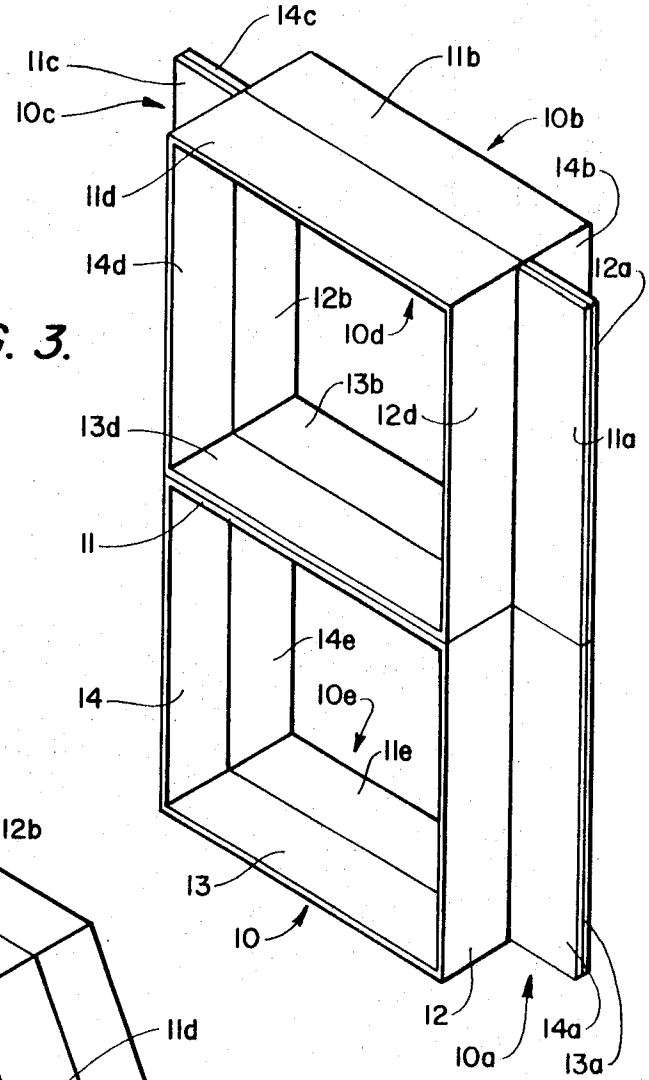
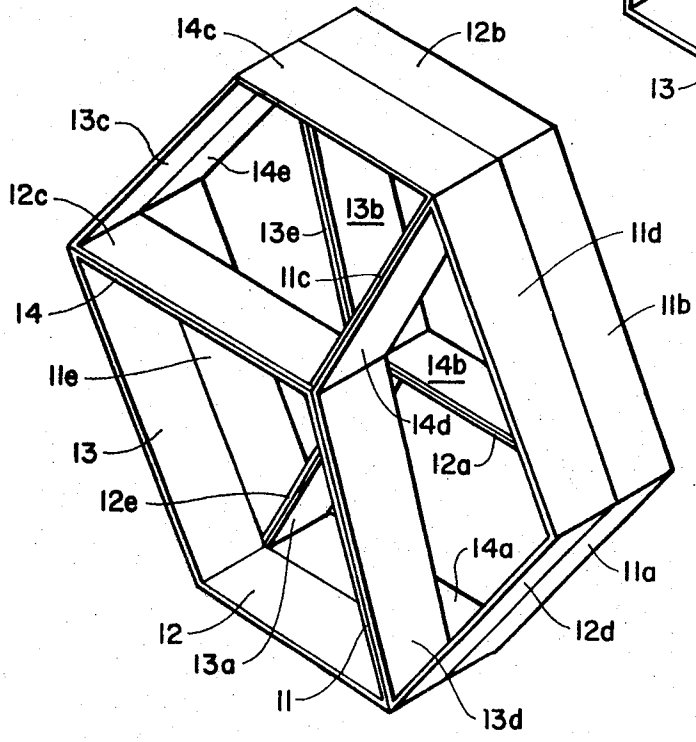


FIG. 4.



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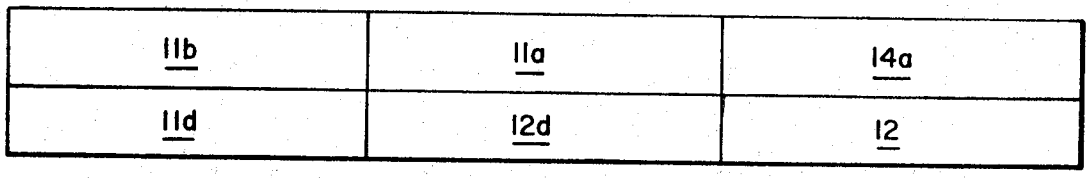


FIG. 7.

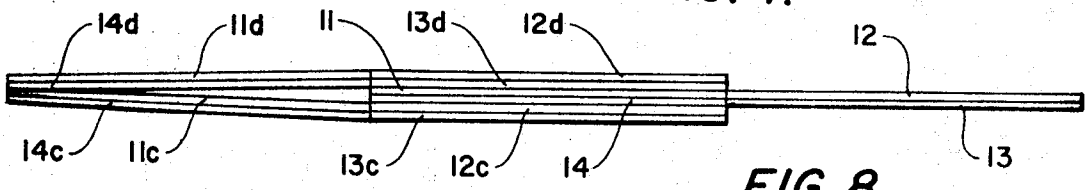


FIG. 8.

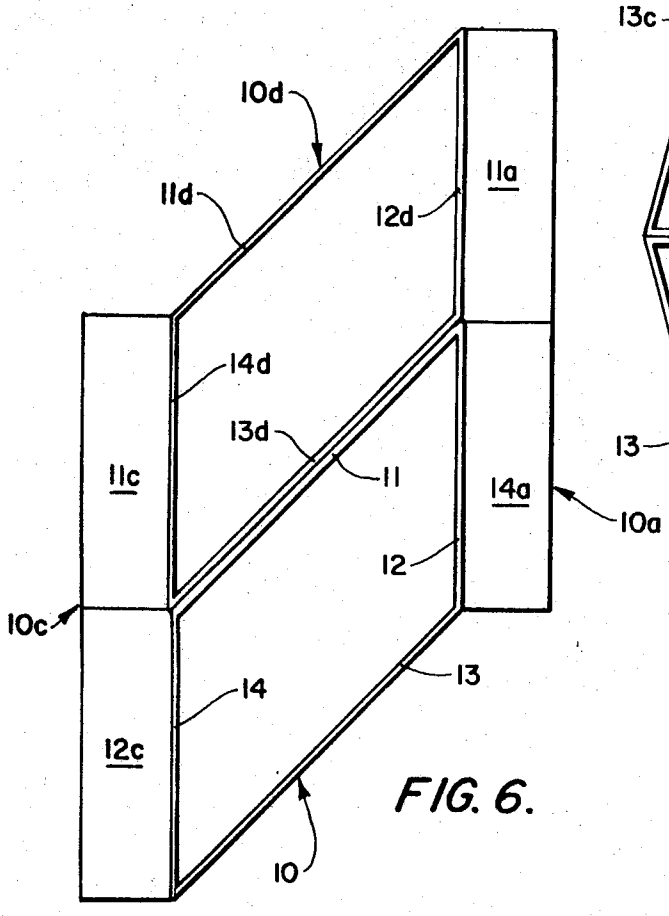


FIG. 6.

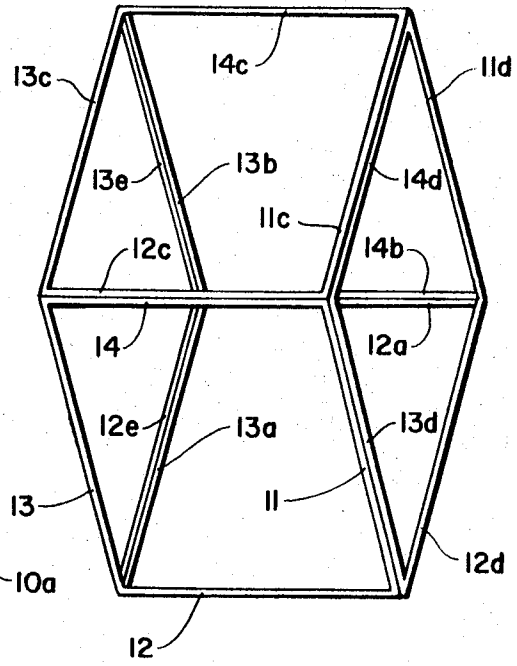


FIG. 5.

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3,623,243

ARCHITECTURAL AND DESIGN AID

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Int. Cl. A63h 33/04
U.S. Cl. 35—72 3 Claims

ABSTRACT OF THE DISCLOSURE

A collapsible, six-sided architectural and design aid may be manipulated to exhibit various geometric configurations. When the design aid is expanded to assume the general shape of a parallelepiped, the sides form consecutively connected and rectangular front, first side, back and second side sections and top and bottom sections. Each section comprises first, second, third and fourth subsections consecutively connected together at their side edges by parallel minor scorelines. Each section is hingedly connected to four other sections by a major scoreline at each side.

BACKGROUND OF THE INVENTION

Modern architectural and design practices dictate the need for visual aids to suggest unique shapes. For example, such aids may be utilized for designing buildings and household furnishings, such as lamps, chairs, mobiles and toys. Such design aids not only sugest esthetic features, but more importantly exhibit integrated constructions exhibiting high degrees of structural integrity. A primary limitation of such design aids is their inability to suggest a wide variety of such constructions.

SUMMARY AND OBJECTS OF THE INVENTION

An object of this invention is to provide an economical and non-complex device which may be opened and manipulated to assume a wide variety of shapes. Such device has a wide variety of uses, such as utilization as an aid for architectural and related design work to sugest the structural orientation of buildings, furniture, lamps, mobiles and like structures. The device may also be employed as a toy or the like.

The device may be opened to assume the general shape of a parallelepiped, for example, with its sides forming consecutively connected and rectangular front, first side, back and second side sections and top and bottom sections connected to the other sections. First, second, third and fourth subsections are consecutively connected together at their side edges by first, second, third and fourth parallel minor hinge means, respectively. An inner side edge of each of the four sub-sections is hingedly connected to an inner side edge of an adjacent subsection of an adjacent section by first, second, third and fourth major hinge means. Each of the minor hinge means is normally disposed in co-linear relationship with a respective one of the major hinge means and with respect to another minor hinge means when the parallelepiped shape is assumed by the device.

DESCRIPTION OF THE DRAWINGS

Other objects of this invention will become apparent from the following description and accompanying drawings wherein:

FIG. 1 is an isometric view of a device embodying this invention and opened to assume the general shape of a parallelepiped;

FIG. 2 is a front elevational view of the FIG. 1 device;

FIG. 3 is an isometric view of the FIG. 1 device assuming another shape;

FIG. 4 is an isometric view of the FIG. 1 device assuming still another shape;

FIGS. 5 and 6 are front elevational views of the FIG. 1 device assuming still other shapes;

FIG. 7 is a top plan view of the FIG. 1 device in its collapsed and flattened condition; and

FIG. 8 is a front elevational view of the collapsed device of FIG. 7.

FIGS. 1 and 2 illustrate the device of this invention as it would appear in its opened condition to assume the general shape of a six-sided parallelepiped. The device is shown in its collapsed condition in FIGS. 7 and 8 to adapt it for shipping or storage purposes. The sides of the FIG. 1 parallelepiped or cube for consecutively connected, identical and rectangular (square) front **10**, first side **10***a*, back **10***b* and second side **10***c* sections and top **10***d* and bottom **10***e* sections connected to the other sections.

The front section, for example, comprises first, second, third and fourth sub-sections **11–14**, respectively, consecutively connected together at their side edges by first, second, third and fourth parallel minor hinge means or scorelines **15–18**, respectively. For example, the various hinge means may be formed by a flexible adhesive tape or the like suitably secured to the sub-sections by a heat-sensitive adhesive.

An inner side edge of each of the four sub-sections **11–14** is hingedly connected to an inner side edge of an adjacent sub-section of an adjacent section by first, second, third and fourth major hinge means or scorelines **19–22**, respectively. It should be noted that each of the minor scorelines is disposed in co-linear relationship with respect to one of the major scorelines and with respect to another minor scoreline. For example, scoreline **15** is co-linear with respect to the major scoreline connecting sub-sections **11***a* and **12***d* together and also the minor scoreline connecting subsections **11***b* and **14***b* together.

As shown, the remaining sub-sections of sections **10***a–***10***e* are depicted by like numerals. However, such numerals are accompanied by an *a* for first side section **10***a*, a *b* for back section **10***b*, a *c* for second side section **10***c*, a *d* for top section **10***d*, and an *e* for bottom section **10***e*.

FIG. 3 illustrates a varied "window-shaped" geometric form of the device effective by suitably manipulating the FIG. 1 shape. In particular, first side section **10***a* and second side section **10***c* are collapsed on themselves. For example, sub-sections **11***a* and **12***a* and sub-sections **13***a* and **14***a* of the first side section are superimposed. The intermediate portion of the design finds back section **10***b* and top section **10***d* aligned and stacked on aligned front section **10** and bottom section **10***e*.

FIG. 4 illustrates a hexagon configuration formed by suitably manipulating the device. In this form, each section **10–10***e* forms a diamond shape with the front, first side and top sections being superimposed on the underlying back, second side and bottom sections.

FIG. 5 is a front elevational view of a varied form of the device achieved by suitably manipulating the device as shown in FIG. 5. In particular, superimposed sub-sections **14** and **12***c* are shifted rightwardly in FIG. 5 to form two pairs of back-to-back triangular sections spaced apart by the illustrated two back-to-back frustoconically shaped sections.

FIG. 6 illustrates a different form of the device which is a slight variation of the FIG. 4 form. In particular, parallel sections **10***a* and **10***c* are shifted in opposite directions. It should be further noted that intermediate subsections **11***d*, **13***d*, **11** and **13** remain in parallel relationship.

What is claimed is:

1. A collapsible, six-sided device opened to assume the general shape of a parallelepiped, said sides normally forming consecutively connected and rectangular front,

first side, back and second side sections and top and bottom sections connected to said other sections, each section consecutively comprising:

first, second, third and fourth sub-sections consecutively connected together at their side edges by first, second, third and fourth parallel minor hinge means, respectively,

an inner side edge of each of said four sub-sections hingedly connected to an inner side edge of an adjacent sub-section of an adjacent section by first, second, third and fourth major hinge means,

each of said minor hinge means being normally disposed in co-linear relationship with respect to a respective one of said major hinge means and with respect to another minor hinge means when said design aid assumes said general shape of a parallelepiped.

2. The invention of claim **1** wherein each of said

sections is square and said device assumes the general shape of a cube.

3. The invention of claim **1** wherein each of said subsections is rectangular and has a length, taken in the direction of a connected major hinge means, substantially greater than the width thereof.

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HARLAND S. SKOGQUIST, Primary Examiner

U.S. Cl. X.R.

161—17; 273—155