United States Patent

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[54] **SEVERAL FLEXIBLE STRIP HAVING NESTABLE CUP ELEMENTS THEREON**
8 Claims, 9 Drawing Figs.

[52] **U.S. Cl.** ..... **46/25,** 24/16 PB, 24/208 A, 46/30, 161/131
[51] **Int. Cl.** **A63h 33/08**
[50] **Field of Search** ..... 46/30, 31, 25, 26, 23; 24/16 PB, 208.3, 73 PF, 204; 161/130, 131

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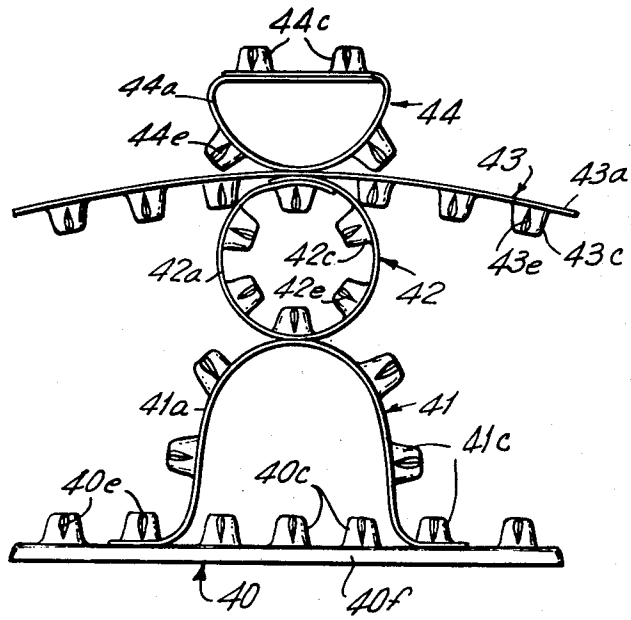
ABSTRACT: An elongate strip of stiff flexible sheet material having formed therein a row of openings and provided with a plurality of bounding walls upstanding from the strip and each extending about a respective opening. The strips may be frictionally connected by nesting the bounding walls of one strip in the opening of another.



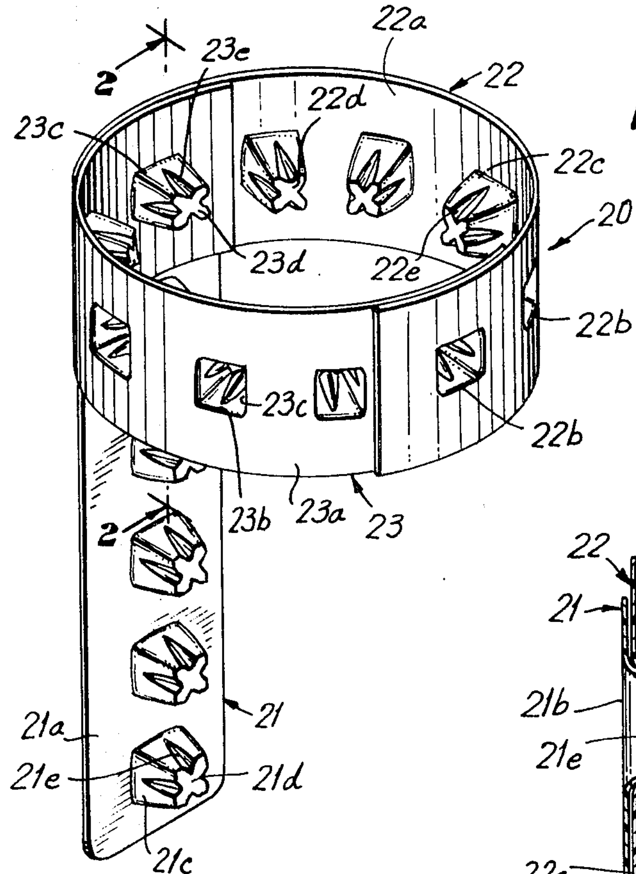


FIG. 1

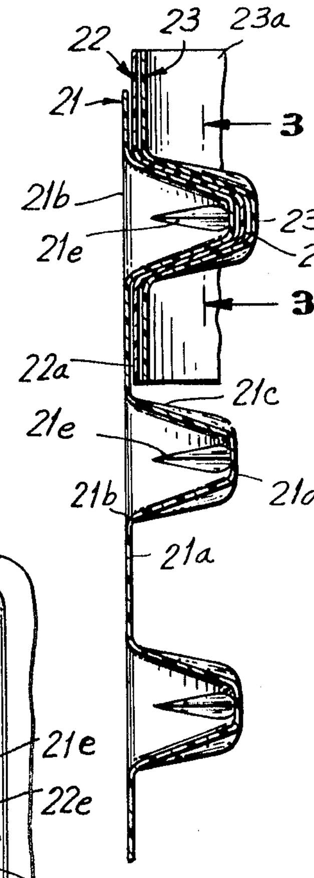
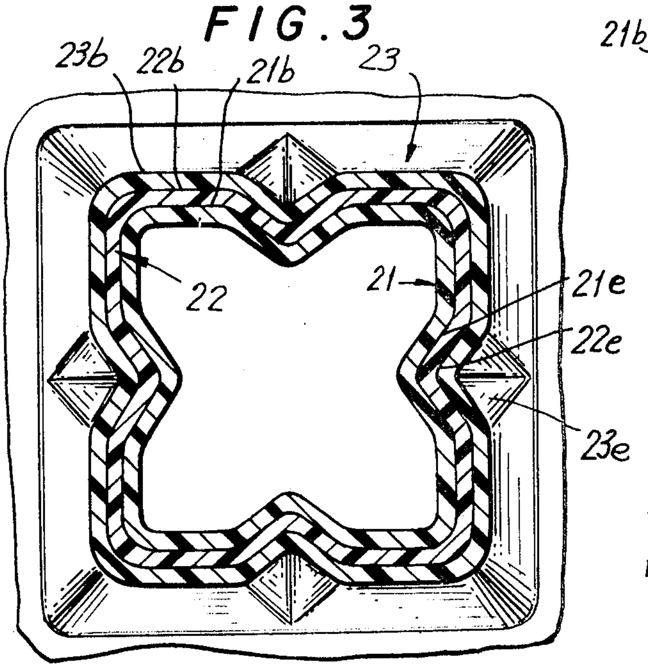


FIG. 2

FIG. 3



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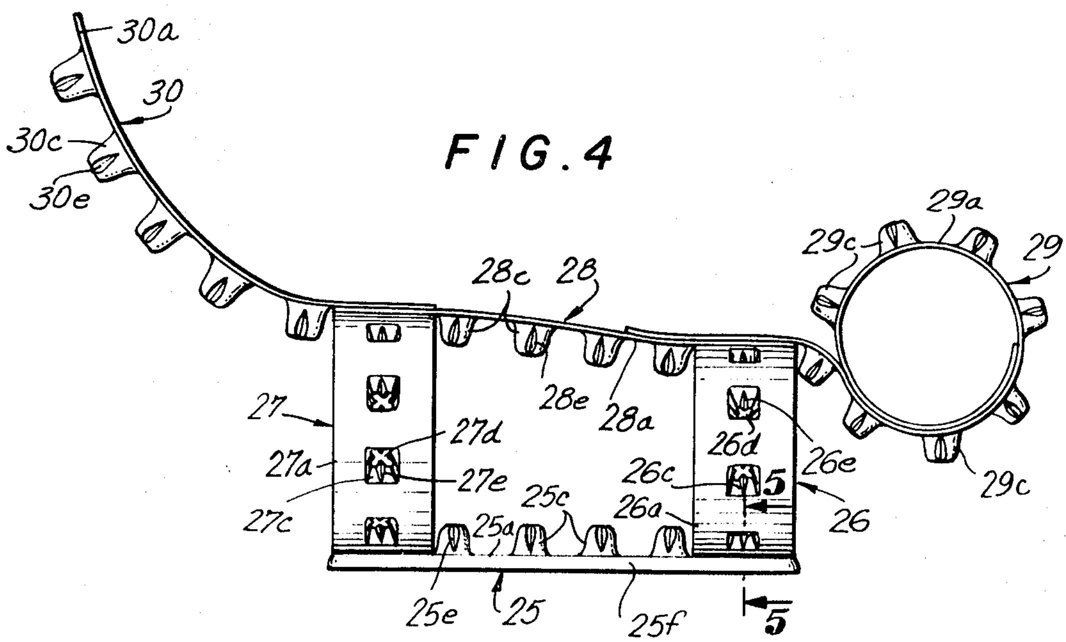
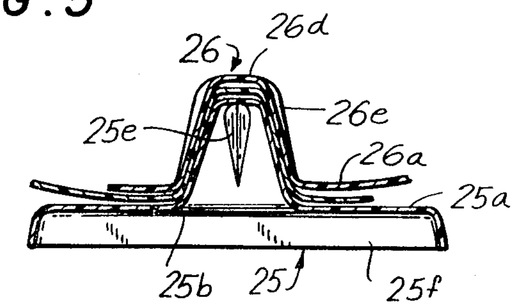


FIG.4

FIG.5



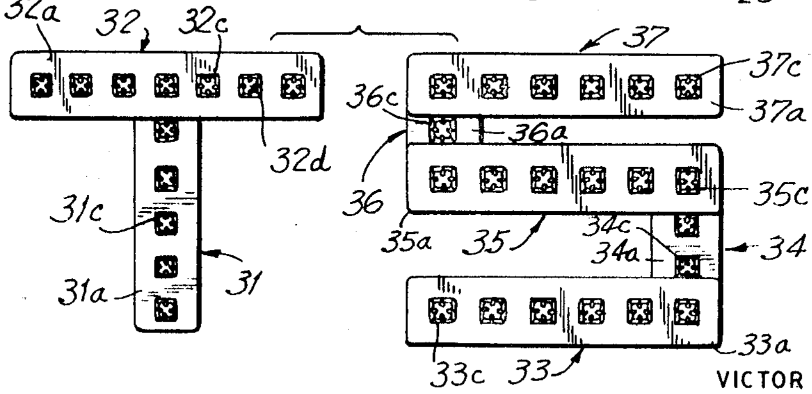


FIG.6

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FIG. 7

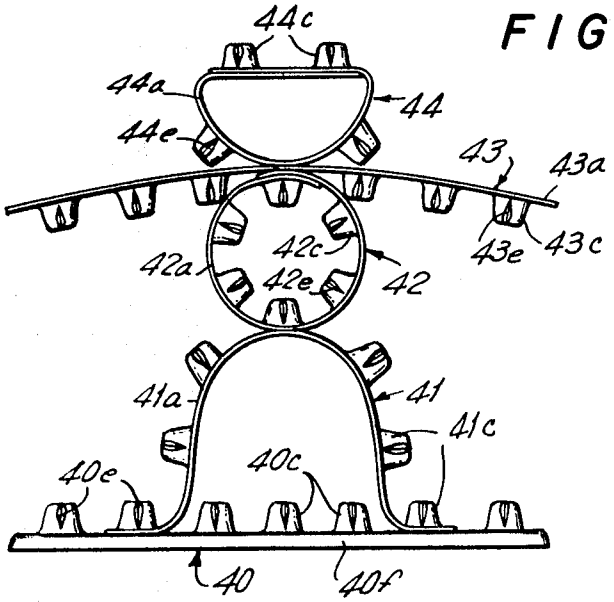


FIG. 8

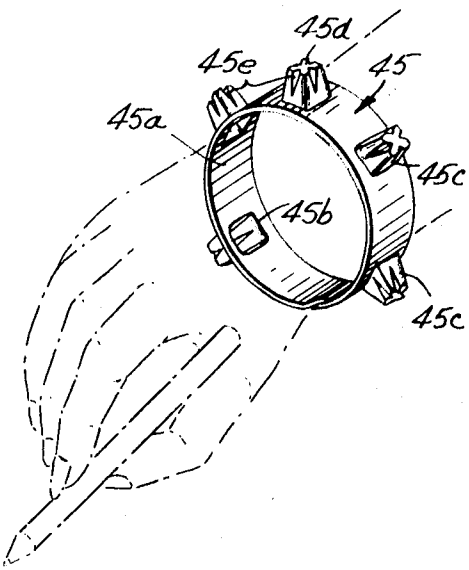
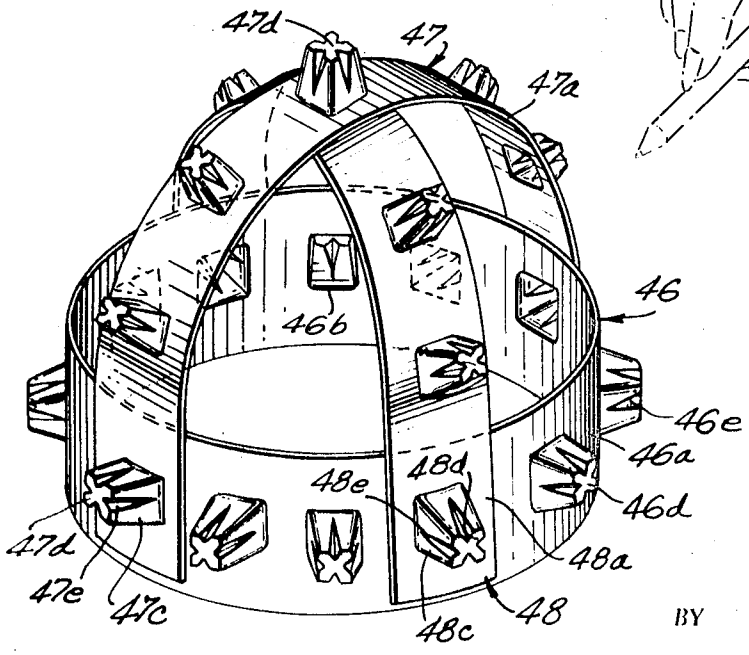


FIG. 9



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SEVERAL FLEXIBLE STRIP HAVING NESTABLE CUP ELEMENTS THEREON

SUMMARY OF THE INVENTION

It is an important object of the present invention to provide a toy construction of the type described, which is extremely simple in structure and capable of an infinite variety of unique configurations and assemblages, limited only by imagination, and which is extremely easily configured and combined in any desired relationship for absorbing and education play by children of widely different ages.

It is a further object of the present invention to provide a toy construction having the advantageous characteristics mentioned in the preceding paragraph which is economical to manufacture, conveniently collapsible to occupy a minimum of space for shipment and storage, relatively light in weight and easily handled by even small children, and uniquely attractive in appearance for continued and repeated usage over long periods of time.

Other objects of the present invention will become apparent upon reading the following specification and referring to the accompanying drawings, which form a material part of this disclosure.

The invention accordingly consists in the features of construction, combination of elements, and arrangements of parts, which will be exemplified in the construction hereinafter described, and of which the scope will be indicated by the appended claims.

BRIEF DESCRIPTION OF THE DRAWING

FIG. 1 is a perspective view illustrating a toy construction of the present invention in a selective combinative arrangement.

FIG. 2 is a partial sectional view taken generally along the line 2—2 of FIG. 1.

FIG. 3 is a partial sectional view taken generally along the line 3—3 of FIG. 2.

FIG. 4 is a side elevational view showing the toy construction of the present invention in another embodiment of use configured to simulate an animal.

FIG. 5 is a sectional view taken generally along the line 5—5 of FIG. 4.

FIG. 6 is a plan view illustrating the toy construction of the present invention in the configuration of letters.

FIG. 7 is a front elevational view illustrating the toy construction of the present invention in a combinative configuration simulating a man.

FIG. 8 is a perspective view illustrating a toy construction of the present invention configured to form a bracelet.

FIG. 9 is a perspective view illustrating the toy construction of the present invention in the configuration of headwear.

Referring now more particularly to the drawings, and specifically to FIGS. 1–3 thereof, there is illustrated therein a halo or headdress, generally designated **20**, and configured by the combination of a plurality of toy elements of the instant invention, namely the elements **21**, **22** and **23**. The elements **21**, **22** and **23** may all be substantially identical, each including an elongate, generally rectangular strip of stiff flexible sheet material as at **21***a*, **22***a* and **23***a*. Each strip **21***a*, **22***a* and **23***a* is formed with a longitudinally arranged series or row of equally spaced, generally congruent, noncircular openings, as at **21***b*, **22***b* and **23***b*, respectively. In the illustrated embodiment, the openings **21***b*, **22***b* and **23***b* are each of rectangular configuration and arranged in side-by-side parallel relation with respect to each other, having their sides parallel to the longitudinal and end edges of their associated strips **21***a*, **22***a* and **23***a*.

Extending about each of the openings **21***b*, **22***b* and **23***b*, in peripheral bounding relation therewith and upstanding from the associated strip are respective bounding walls **21***c*, **22** *c* and **23***c*. The bounding walls **21***c*, **22***c* and **23***c* are thus of generally rectangular configuration, and each bounding wall is convergent or tapering in the direction away from its respective strip **21***a*, **22***a* and **23***a*. Extending across the upper or outer end of each bounding wall **21***C*. **22***c* and **23***c* is an upper, end wall or top, as at **21***d*, **22***d* and **23***d*, respectively. The end or top walls **21***d*, **22***d* and **23***d* thus serve to effectively cover and close the openings **21***b*, **22***b* and **23***b* of the respective strips. In addition to the outwardly tapering or convergent configuration of the generally rectangular bounding walls **21***c*, **22***c* and **23***c*, they may be provided with outwardly extending depressions or grooves, as at **21***e*, **22***e* and **23***e*. More specifically, the grooves **21***e*, **22** *e* and **23***e* may each be formed in a respective side or wall portion of the bounding walls and of a divergent or enlarging configuration in the direction toward and terminating at the respective end walls **21***d*, **22***d* and **23***d*.

In practice, each element **21**, **22** and **23** may be integrally formed by any suitable procedure, say from plastic material, such that the strips **21***a*, **22***a* and **23***a* are of a stiff flexible character while the walls **21***c*, **22***c* and **23***c* are reinforced by their configuration to minimize flexibility.

In the combinative arrangement illustrated in FIG. **1**, the elements **22** and **23** are each arranged with their strips **22***a* and **23***a* flexed and their respective walls **22***c* and **23***c* inward or on the inner side of the arc of flexure. In this condition, the elements **22** and **23** are locate with their end portions in overlapping relation and combined to define a cylinder or circle, the overlapping portions of strips **22***a* and **23***a* having their endmost walls **22***c* and **23***c* engaged in interfitting relation.

More specifically, the distal or endmost bounding walls **22***c* of element **22** are each engaged through a respective endmost opening **23***b* of the element **23** and into the associated bounding wall **23***c*. By the rectangular, generally congruent relationship of openings **22***b* and **23***b*, and the similar configuration of bounding walls **22***c* and **23***c*, the entering walls **22***c* are conformably and nonrotatably engaged in the similarly configured bounding walls **23***c* being in a frictionally holding, interfitting relation therein. In this manner, the elements **22** and **23** combine to define a self-sustaining annulus, as for the halo or headdress **20**.

The strip **21***a* of element **21** is illustrated in a relatively straight condition, having one endmost bounding wall **21***c* entering through an endmost opening **22***b* of element **22** and frictionally engaged in holding relation within the associated bounding wall **22***c*. This condition is best seen in FIGS. **2** and **3**, from which it will be appreciated that the several elements **21**, **22** and **23** are frictionally retained in their illustrated association of FIG. **1**, being held therein against relative movement, other than flexure of the elements. However, the elements **21**, **22** and **23** may be readily dissociated or separated by deliberate removal of the interengaged bounding walls from their frictional holding relation. It will be appreciated that, and as can be seen from FIGS. **2** and **3**, that the bounding walls and end walls of the cup-shaped elements are stackable or nestable in interfitting frictional relationship with each other whereby, the buildup of strip thickness is, therefore, substantially equal to the summation of the stacked strip thicknesses.

In the embodiment shown in FIGS. **4** and **5**, a base element is there generally designated **25**, being of elongate configuration and adapted to rest on any suitable support. A pair of front and rear elements **26** and **27** upstand from the base element at the opposite ends thereof, and intermediate upper element **28** extends between upper regions of the upstanding elements **26** and **27**. A forward element **29** extends forwardly from a forward region of the intermediate element **28**, and a rear element **30** extends rearwardly from a rear region of the intermediate element.

The base element **25** may be essentially similar to the first described elements **21**, **22** and **23** including an elongate, generally rectangular strip **25***a*, having a longitudinally arranged series or row of substantially identical, equally spaced upset portions defining bounding walls **25***c*. The element **225** differs from the elements **21–23** only in the provision of a flange **25***f* extending peripherally about the strip **25***a* and serving to reinforce and effectively rigidify the same against flexure. By this structure the element **25** affords a relatively rigid

base for effectively supporting the superstructure of elements **26–30**.

The upstanding elements **26** and **27** may each be entirely identical to the elements **21–23**, and flexed in the configuration of an annulus with their bounding walls **26***c* and **27***c* internally of the annulus. Further, the endmost bounding walls **26***c* are engaged in frictional interfitting relationship with each other to secure the annulus in position, and further engaged in frictional interfitting relation with the forward endmost bounding wall **25***c* of base element **25**, as best seen in FIG. **5**.

The rearward annular-configured element **27** may be similarly secured and arranged on the rearward region of the base element **25**.

The intermediate element **28**, as well as forward and rearward elements **29** and **30** may each be identical (except for the lengths of the strips) to the elements **21–23**, and their illustrated association is believed apparent. Briefly described, the endmost bounding walls **28***c* of element **28** are frictionally interfit in engagement with the uppermost bounding walls of front and rear upstanding elements **26** and **27**. The forward element **29** has one endmost bounding wall **29***c* engaged in a medially located bounding wall, and the other endmost bounding wall of the element **29** is frictionally interfit in one of the bounding walls **28***c* of intermediate element **28**. Also, the forwardmost bounding wall **30***c* of rearward element **30** is frictionally interfit in the rearmost bounding wall **28***c* of intermediate element **28** and uppermost bounding wall or rear upstanding element **27**.

In addition to the formation of three-dimensional configurations, the toy element of the present invention may be employed in two-dimensional configurations, say to represent numerals or letters. For example, in FIG. **6**, a pair of toy elements in accordance with the instant invention are generally designated **31** and **32**, each being substantially identical to one of the first described toy elements **21–23**. The elements **31** and **32** are arranged in generally coplanar, but crossed relation, with an upper endmost bounding wall **31***c* of the element **31** in frictional interfitting relation with a medially located bounding wall **32***c* of the crosswise element **32**. Obviously, this forms a letter "T."

Similarly, the letter "S" may be formed by this combinative association of elements **33**, **34**, **35**, **36** and **37**. In this letter configuration it will appear that the elements **34** and **36** are of lesser length than the elements **33**, **35** and **37**. Of course, the instant elements may be of any desired length, and may advantageously be of a readily severable or frangible material for reducing the length, and may be combinable in the above-described frictionally interfitting relation to enlarge the length.

The simulated human form of FIG. **7** includes a base element **40** which may be identical to the base element **25**, including a rigidifying peripheral flange **40***f*, and a leg-simulating element **41** which may be identical (except for the lengths of the strips) to the aforedescribed elements **21–23**, being flexed into an inverted generally U-shaped configuration with its endmost bounding walls **41***c* frictionally interfit with spaced bounding walls **40***c* of the base element **40**. A torso-simulating element **42** may be defined by an annular configured element identical to those of FIG. **1**, with endmost bounding walls **42***c* in frictional interfitting engagement with an uppermost, medial bounding wall **41***c* of the element **41**.

An additional element **43** may be superposed on the torso-simulating element **42** to simulate outwardly extending arms. That is, an intermediately located bounding wall **43***c* of the element **43** is frictionally interengaged in the uppermost, frictionally interengaged bounding walls **42***c* of element **42**. In addition, an uppermost or head-simulating element **44** may be flexed in the configuration of a semicircle wherein one pair of endmost bounding walls **44***c* are engaged in and frictionally interfit with the other pair of endmost bounding walls to define a reinforced and relatively straight strip region.

FIG. **8** represents an element **45**, which may be identical to the elements **21–23**, having its endmost bounding wall **45***c* engaged in frictional interfitting relation to define an annulus for circumposition about a wearer's wrist in the manner of a bracelet.

Another article of headwear is shown in FIG. **9**, wherein an element generally designated **46** is flexed to an annular configuration, as described hereinbefore, say in connection with the annular configuration of element **45** in FIG. **8**. In addition, a pair of elements **47** and **48** are each of construction substantially identical to the elements **21–23** and arranged in crosswise bridging relation with respect to the annular-configured element **46**. That is, the elongate element **48** has its opposite end bounding walls **48***c* each engaged frictionally interfitting relation with a respectively diametrically opposed bounding wall **46***c* of the element **46**. Thus, the element **48** extends in bridging relation diametrically across the element **46**. Also, the element **47** extends in bridging relation diametrically across the annulus **46**, transversely of the element **48**, and has its endmost bounding walls **47***c* engaged in frictionally interfitting relation with adjacent bounding walls **46***c* of the element **46** and a medial bounding wall **47***c* in interfitting relation with a medial bounding wall **48***c* of element **48**.

Of course, the several configurations illustrated and described hereinbefore are merely representative, and it is obvious that an infinitely variable number of additional configurations may be formed, as by persons of all ages upon exercises of the imagination.

From the foregoing, it is seen that the present invention provides a toy construction which fully accomplishes its intended objects and is well adapted to meet practical conditions of manufacture, distribution and use.

Although the present invention has been described in some detail by way of illustration and example for purposes of clarity of understanding, it is understood that certain changes and modifications may be made within the spirit of the invention and scope of the appended claims.

1. A toy construction comprising an elongate thin strip of stiff flexible sheet material of uniform thickness adapted to be readily severable into a plurality of pieces of variable lengths, said strip being provided with a single row of noncircular openings arranged longitudinally along said strip, said openings being in the form of thin substantially deep cup-shaped elements protruding beyond one side of said thin strip, each of said cup-shaped elements having a plurality of lateral bounding walls of substantially the same thickness as said strip upstanding from said strip and inwardly extending depressions formed in the external surface of each of said bounding walls, said cup-shaped elements of a plurality of said strips being nestable in interfitting frictional and nonrotatable relationship with each other in a plurality of relative positions, said strip having a sufficient number of said openings to provide said plurality of pieces, with at least two said pieces each having two said openings therein wherein an article may be formed from a plurality of said pieces, and the buildup of strip thickness for any number of stacked strips or pieces is substantially equal to the summation of stacked strip thicknesses, whereby a compactly shaped article may be made.

2. A toy construction according to claim **1**, said openings being equally spaced apart for engagement of a selected adjacent pair of said bounding walls into a selected other adjacent pair of said bounding walls upon passage through the openings associated with said other adjacent pair of bounding walls.

3. A toy construction according to claim **2**, said openings being substantially congruent to each other for conforming engagement of said bounding walls.

4. A toy construction according to claim **3**, said bounding walls each being convergent in the direction away from said strip for snug frictional interfitting relation of engaging bounding walls.

5. A tory construction according to claim **4**, wherein said cup-shaped elements are formed with an end wall extending across the upper end of each bounding wall, whereby each bounding wall and its associated end wall effectively close the associated opening.

6. A toy construction according to claim 4, said bounding walls each conformably bounding its associated opening, whereby engaging walls are nonrotatably engaged with each other.

7. A toy construction according to claim 6, in combination with a similar strip, said similar strip having a peripheral flange effectively rigidifying the latter.

8. A toy construction according to claim 1, wherein said inwardly extending depressions form diverging grooves terminating at outermost protruding ends of said upstanding bounding walls.