# United States Patent

**Moravick et al.**

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[54] **JIGSAW PUZZLE**


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[51] **Int. Cl.**.....**A63f 9/10**

[58] **Field of Search**.....273/157 R, 157 A; 46/11; 206/46 AM



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[57] **ABSTRACT**

A jigsaw puzzle is provided comprising a generally cylindrical support, a jigsaw puzzle formed into the shape of a cylindrical sleeve overlying the support and divided into a plurality of interrelated jigsaw puzzle elements and a transparent plastic sleeve in overlying and sliding engagement to said puzzle and underlying support. A process for forming and assembling the puzzle is also provided which includes the steps of applying a puzzle in sheet form to the surface of a cylindrical support member, the puzzle being applied in conjunction with a transparent plastic sleeve element which overlies and retains the puzzle in overlying and conforming relationship to the support element.


**12 Claims, 5 Drawing Figures**

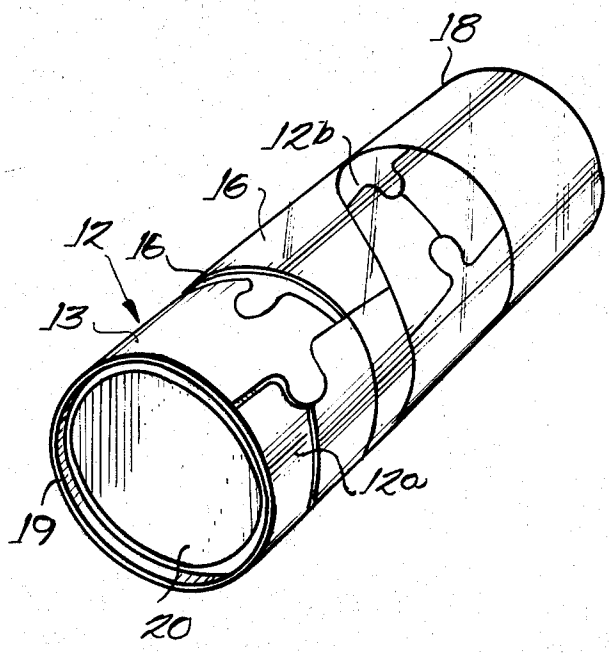


Fig. 1.

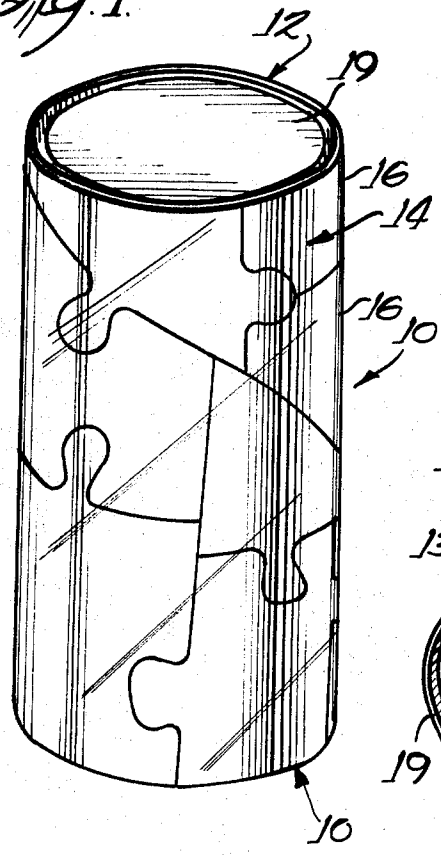



Fig. 2.

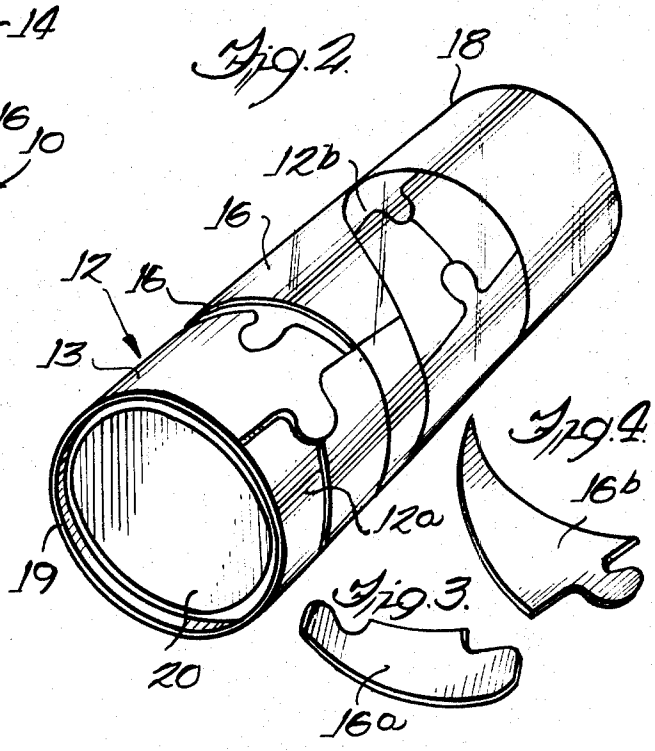


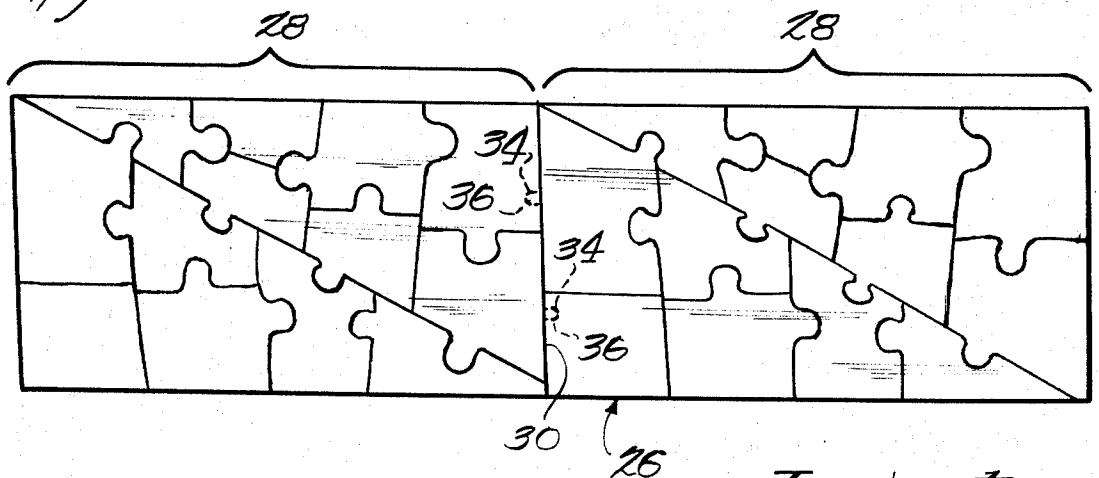

Fig. 4.




Fig. 3.




Fig. 5.




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# JIGSAW PUZZLE

## BACKGROUND OF THE INVENTION

1. Field of the Invention

This invention is in the field of Puzzles and Games and more particularly to jigsaw-type puzzles in particular geometric form, more specifically in generally cylindrical form. The puzzle includes a support means on which the puzzle means is supported and rests and includes an overlying, transparent puzzle means retaining sleeve which is used in the working of the puzzle in the geometric form indicated above.

2. Description of the Prior Art

Jigsaw puzzles of the type which include a sheet of paperboard or other similar material in planar form and having a pictorial or other printed representation on one surface thereof and divided into a plurality of interrelated and customarily interlocking pieces are known. The generally most common form of this puzzle is in a planar or flat sheet and the person working the puzzle does so on a flat supporting surface such as a table. Other puzzle structures are also known wherein the puzzle is in other planar geometric forms such as, for example, a disc or circular form, triangular, octagons, pentagons, hexagons, and the like. Three-dimensional puzzle forms are also known which require a supporting surface to which the interrelated puzzle elements are affixed to form the three-dimensional shape. Exemplary of such structures are U. S. Pat. No. 2,957,251, which relates to a globe puzzle in which various interrelated jigsaw puzzle elements are provided with clips on one concave or spherical surface and pictorial printing appears on the other or convex surface. The clips are so arranged so that they can be fitted into slots which are regularly formed in the surface of a sphere or a globe. When the puzzle is completed by assembly of all of the pieces, which includes the steps of affixing them in their appropriate and respective slots, the worker will have formed a printed globe of the world with map illustrations as the printed subject matter on the outer or convex surface thereof. Similarly, U. S. Pat. No. 2,987,318 discloses another globe-type puzzle wherein puzzle elements are carried away from the central supporting element by means of rods so that the only support for each puzzle element is a hole in a supporting sphere or base into which one end of the rod is affixed, the other end bearing the printed puzzle element. In this instance what is formed is a structure which is a spherical or spheroidal base or support element and a spaced spheroidal or spherical shell surrounding the support element and spaced therefrom by the rods or projecting means attached to each puzzle element.

None of the prior art structures are directed to cylindrical puzzles in which a cylindrical support means is employed as a working base and a follower or sleeve means is included to retain the puzzle elements in place while assembling the same on the support means.

## BRIEF SUMMARY OF THE INVENTION

The present invention is a jigsaw puzzle comprising a generally cylindrical support means, a jigsaw puzzle means in the shape of a sleeve overlying said support means and divided into a plurality of interrelated jigsaw puzzle elements and a transparent plastic sleeve in overlying and sliding engagement to said puzzle and support means.



The present invention also relates to a process for forming a three-dimensional cylindrical jigsaw-type puzzle which includes applying a jigsaw puzzle means in sheet form to a generally cylindrical support element in overlying relationship thereto so that the ends of the puzzle overwrap about on the surface of the support and sheathing the support and overlying puzzle means with an overlying transparent cylindrical plastic sleeve slideably removable therefrom to retain the puzzle means on the support element.

It is accordingly an object of the present invention to provide a jigsaw-type puzzle in cylindrical form which may be worked without the use of adhesives, clips or other fastening elements affixed to the puzzle elements to adhere the puzzle to the support base.

It is another object of the present invention to provide a game structure which is adaptable as a part of a commodity package wherein the cylindrical support element may be and preferably is a container such as, for example, a tin can or the like which contains a comestible or other edible commodity.

## BRIEF DESCRIPTION OF THE DRAWINGS

Reference is now made to the drawings wherein FIG. **1** is a perspective view of the puzzle of the present invention.

FIG. **2** is a perspective view of the puzzle of FIG. **1** showing the same with the plastic sleeve partially removed and the puzzle partially assembled.

FIGS. **3** and **4** are puzzle elements in perspective which are removed from the partially assembled puzzle of FIG. **2**.

FIG. **5** is a top plan view of a strip of puzzle means as the same is intended to be formed as a repeating unit of a continuous strip of fiberboard or other material showing a two-completed puzzle means sectors as the same would be affixed to a cylindrical surface.

For a more complete understanding of the present invention reference is made to the drawings, particularly FIGS. **1** and **2** wherein there is illustrated in FIG. **1** a completed puzzle assembly **10** including a support means **12** in the form of a cylinder, in this illustrated instance a tin can; a puzzle means **14** comprised of a plurality of interrelated jigsaw puzzle elements **16** in surrounding or encompassing engagement with the support element **12**; and a plastic sleeve **8** encasing the support means and puzzle means.

In FIG. **2** the plastic sleeve **18** is shown partially withdrawn and portions of the puzzle elements **16** partially assembled on the surface **13** of the support structure **12**. The puzzle elements **16*a*** and **16*b*** in FIGS. **3** and **4** are removed from the puzzle structure and would normally be placed in the spaces on the surface designated as **12*a*** and **12*b*** respectively.

As shown the support means **12** comprises a cylinder **13** having sealed ends **19** and **20**. In a preferred embodiment the support structure is a food container known commonly as a "tin" can which could be used to contain soft drinks, food or the like. The tin can would have the customary brand identification lithographed on the surface thereof in the normal label identification. The puzzle itself is preferably and normally formed of fiberboard or paperboard and have lithographed on the surface thereof a pictorial representation. While the support element of substrate is a tin can

in the preferred illustrated embodiment, it should be understood that other substrates could be used such as a cylinder closed at one end or open at both ends or a solid material such as plastic foam, i.e., polystyrene or polyurethane foam.

Normally the user would purchase the puzzle structure in its assembled form comprising a base or support element **12**, puzzle means **14** and sleeve **18**. The various puzzle elements **16** of puzzle means **14** would be disassembled by removing the sleeve **18** and the units **16** be reassembled by the puzzle worker by applying them to one end of the surface of the cylindrical support means **12** and retaining them in place by gradually sliding the sleeve in the direction of the arrow shown in FIG. **2**.

The puzzle unit **14** is applied to the surface **13** of the support **12** by conventional techniques whereby the support is rotated axially and the puzzle unit applied and conformed to the cylindrical surface. In FIG. **5** a strip designated **26** is illustrated with two separate units bracketed and designated as **28**. The plastic cylindrical sleeve **18** shown in FIGS. **1** and **2** is preferably applied over puzzle unit **14**. The strip **26** is cut or sectorized by division lines designated **30** which divided the puzzle units **28** in the strip **26**. In this unit the edges **32** are parallel to each other and the division lines **30** are also parallel to each other to form rectangular units **28**. If desired, the division lines **30** can be at an angle to the edges **32** to thereby form a rhomboid or parallelogram shape, or may be curved. If desired, the continuous strip of puzzle units **26** may have interlocking tabs **34** with corresponding notches **36** to provide an interlock at the division line, as illustrated in FIG. **5**.

When the strip **26** is die cut to form the various puzzle elements **16** of puzzle unit **14**, the cut may be such as to retain small portions of puzzle unit material as inter-connecting bridges to hold the puzzle unit together for assembly purposes but sufficiently minor so that when the sleeve is removed, the puzzle elements are easily broken apart. The die cut at the division lines **30**, however, would be complete to facilitate manufacture and application to the support **12**. After the puzzle unit **26** is applied to the support **12**, it is retained in place by a cylindrical plastic sleeve.

Alternatively, if desired, the puzzle unit **14** may by applied to the arcuate surface **13** of support **12** using a weak bond adhesive that can be easily broken. The plastic sleeve can then be applied in a separate step.

The plastic sleeve material is a transparent plastic, which is self-supporting so that the sleeve retains its cylindrical shape after removal. Plastics such as cellulose acetate, cellulose acetate-butyrate, or the like may be employed. While the sleeve is preferably continuous, it may contain perforations to permit escape of moisture in manufacture as described below.

The puzzle unit is preferably made from fiber or paperboard so that it may be readily handled and applied but retain its curvilinear cast after having been applied to the surface of the support member **12**. The addition of moisture by means of a spray or steam jet to the paperboard puzzle unit aids in softening the same to form it to the support and on drying the puzzle unit retains its set or shape.

It is intended that the outer cylindrical surface of the puzzle member **14** to be lithographed or printed with a suitable picture or design to provide clues to the assembly of the puzzle which is the normal entertainment factor involved in such structures.

While the support means **12** may be any generally cylindrical structure such as, for example, a hollow paperboard or plastic tube or even a solid such as polystyrene, one preferred structure is where the support member **12** is a container or can for commodities, especially edible commodities such as a soft drink (i.e., cola, orange drink) as illustrated in FIGS. **1** and **2**. The can would have the normal lithographed brand identification or label applied to the cylindrical surface **13** thereof and the puzzle **14** with a variety of printed illustrations applied thereon. If desired, a plurality of printed designs could be included in a six-pack unit of the soft drink.

What is claimed is:

**1**. A cylindrical jigsaw puzzle construction comprising:

a. a generally cylindrical support means;

b. a jigsaw puzzle means in the shape of a sleeve overlying said support means and divided into a plurality of interrelated jigsaw puzzle elements; and

c. a transparent plastic sleeve in overlying and sliding engagement to said puzzle and support means.

**2**. A puzzle construction according to claim **1** wherein said cylindrical support means is a right circular cylinder.

**3**. A puzzle construction according to claim **1** wherein the cylindrical support means is a container.

**4**. A puzzle construction according to claim **3** wherein the support means is a right circular cylindrical container sealed at each end thereof.

**5**. A puzzle construction according to claim **1** wherein the puzzle means (b) is in the form of a right circular cylindrical sleeve.

**6**. A puzzle construction according to claim **5** wherein the puzzle elements are in interlocking relationship.

**7**. A puzzle construction according to claim **5** wherein said cylindrical support means (a) is a paperboard sleeve.

**8**. A puzzle construction according to claim **1** wherein said puzzle element (b) has a pictorial representation printed on the outer surface thereof.

**9**. A puzzle construction according to claim **1** wherein said transparent sleeve (c) is adapted for sliding and securing engagement with the support means (a) and overlying puzzle means (b) and is adapted to hold puzzle elements of the puzzle means (b) as they are fitted together on the support surface during puzzle assembly and movable axially along the support as assembly progresses.

**10**. A puzzle according to claim **1** wherein said transparent sleeve (c) is self-supporting plastic.

**11**. A puzzle according to claim **10** wherein opposed abutting edges of the puzzle means are interlocked by one or more interlocking puzzle sectors on one or more puzzle elements.

**12**. A process for forming a cylindrical jigsaw puzzle construction which comprises:

1. providing a cylindrical support member in the shape of a right cylinder;

2. applying a jigsaw puzzle means to the cylindrical surface of said support to cover the entire cylindrical surface thereof; and
3. securing the puzzle means to the surface of said support by engaging the same with a cylindrical transparent plastic sleeve.

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