ABSTRACT: A puzzle-type game comprising a plurality of generally flat, uniform-shaped sections nestable end to end to form an elongated object. The sections all have interengaging surfaces, with the interengaging surfaces of each section being complementary with the surfaces of at least one, or more, but not all of the remaining sections whereby the sections must be properly matched so as to interengage and thereby nest all of the sections to form the elongated object. In the preferred embodiment of the invention, the sections are disc-shaped and the interengaging surfaces comprise at least one pin and one aperture on each section, each pin and aperture having a positional relationship on each section with complementary aperture and pin, respectively, on one, or more but not all of the remaining sections.
PUZZLE COMPRISING DISCS WITH INTERENGAGING PINS AND APERTURES

BACKGROUND AND SUMMARY OF THE INVENTION

This invention relates to a puzzle-type game of the type which has a plurality of sections having means requiring orientation of the sections in proper positional relationships to form a three-dimensional object.

There presently are available various puzzle type games which utilize a plurality of components having various shapes or color combinations which are correlated and must be positioned properly or matched so as to define a three-dimensional object. Some of the games simply require the player to match the sections or pieces in proper colored or numbered sequences. This invention is directed to a new improved, novel puzzle-type game which is comprised of a plurality of three-dimensional sections which must be properly matched to define a three-dimensional object.

The principal object of the present invention, therefore, is to provide a new and improved puzzle-type game.

Another object of the invention is to provide a puzzle-type game which includes a plurality of sections nestable end to end to form an elongated three-dimensional object. The sections have interengaging surfaces, with the interengaging surfaces of each section being complementary with the surfaces of at least one and not all of the remaining sections whereby the sections must be properly matched and interengaged and thereby nest all of the sections to form the elongated object.

In the preferred embodiment of the invention, the sections are generally disc shaped with identical diameters and with the interengaging surfaces on opposite sides of the discs. The interengaging surfaces comprise interengaging pins and apertures on each of the sections. The pin and aperture have positional relationships on each section complementary with an aperture and pin, respectively, on at least one, or more, but not all of the remaining sections. The complementary matching pins and apertures are spaced about the disc-shaped sections at different angular increments and the pins and apertures on all sections preferably are equally spaced from the center of the disc-shaped sections. Some of the sections have only one pin and one aperture, whereas other sections have two or more pins and/or apertures. The endmost sections, when nested, have convex outer surfaces to distinguish the endmost sections from the intermediate sections, when nested and thereby form an elongated rounded object.

Other objects, features and advantages of the invention will become apparent from the following detailed description taken in connection with the accompanying drawings.

DESCRIPTION OF THE DRAWINGS

FIG. 1 is a perspective view of a puzzle-type game embodying the concepts of the present invention;

FIG. 2 is a central section, on an enlarged scale, of the puzzle-type game shown in FIG. 1;

FIG. 3 is an exploded view of the puzzle-type game showing the plurality of nestable sections in proper orientation to form the puzzle-type game shown in FIGS. 1 and 2; and

FIG. 4 is a schematic view, on a reduced scale, showing a plurality of key positions for the various pins and apertures at seven different equal angular increments about the marginal periphery of the disc-shaped sections.

DETAILED DESCRIPTION OF THE INVENTION

The puzzle-type game of the present invention comprises a plurality of generally disc-shaped sections, generally designated 10 and 10', which have generally identical diameters to define a cylindrical, elongated object. The endmost sections, generally designated 10', have convex end surfaces on the outer surfaces which, when all of the sections 10 and 10' are nested together as shown in FIGS. 1 and 2, a three-dimensional, elongated rounded object is formed, generally resembling a link of sausage or other similar three-dimensional object, generally designated 12 in FIG. 1. A string 14 may be provided and secured to one end section 10' to provide a handle for carrying or manipulating the game during assembly or after the sections are assembled.

As seen in FIGS. 2 and 3, each disc-shaped section 10 and 10' has a cylindrical rim portion 16 which is spanned midway between the marginal edges thereof by a generally flat wall portion 18. The rim portion 16 of the sections are of equal diameters. The end sections 10' have the aforesaid convex surfaces, designated 19.

Generally speaking, the sections have interengaging surfaces, with the interengaging surfaces of each section being complementary with the surfaces of at least one, or more, but not all of the remaining sections whereby the sections must be properly matched and properly positioned, as shown by the exploded view of FIG. 3, so as to interengage and thereby nest all of the sections to form the elongated object shown in FIGS. 1 and 2. In the preferred embodiment of the invention, the interengaging surfaces comprise at least one pin "P" and one aperture "A" (as shown in the third and fourth sections 10 and 10' from the top of FIG. 3). The letter designations "P" and "A" for the pins and apertures, respectively, are not applied to the remaining sections, for clarity purposes. The pins and apertures "P" and "A", respectively, on all sections 10 and 10' preferably are of the same size and shape to enhance the puzzle aspects of the game and, preferably, are equally spaced from the center of the disc-shaped sections. Preferably, a press fit is provided between the complementary pins and apertures so that the resulting formed elongated object shown in FIGS. 1 and 2 will stay together when properly assembled.

Referring to FIG. 4, a schematic positional key diagram is shown, with seven (numbers "1" through "7") positions or increments shown about the marginal periphery of the wall portions 18 of the disc-shaped sections when looking from the bottom end of FIG. 3. These numbers "1" through "7", in the diagrammatical key of FIG. 4, are correlated with the numbers shown in FIG. 3, designating the various positions of the pins and apertures in the various sections 10 and 10'. More particularly, it can be seen that the topmost section 10' in FIG. 3 has a pin in the number "7" increment position for mating up with an aperture in the "7" increment position on the adjacent lower section 10. Additionally, the uppermost section 10' has an aperture in the number "6" increment position (of the key shown in FIG. 4) for receiving a pin on the adjacent lowermost section 20 in the number "6" increment position. Proceeding downwardly in FIG. 3 to the second and third sections 10, the second section has a pin in the number "2" increment position and an aperture in the number "3" increment position for complementarily engaging a similarly incrementally positioned aperture and pin in the third section 10 in the same increment positions "2" and "3", respectively. For brevity purposes, this correlation and the numbers "1" through "7" can be made in a similar fashion by comparing each of the following section 10, and the endmost section 10', down to the bottom of FIG. 3.

In the embodiment of the invention shown in the drawings, as can be viewed by comparing the sections 10 and 10' in FIG. 3, there are two sets of pins and apertures in the "1" increment position (FIG. 4); there are three sets of pins and apertures in the "2" increment position; there is one set of a pin and an aperture in the "3" increment position; there is one set of a pin and an aperture in the "4" increment position; there is one set of a pin and an aperture in the "5" increment position; there is one set of a pin and an aperture in the "6" increment position; and there are three sets of pins and apertures in the "7" increment position. This can readily be seen by following the particular increment positions vertically through the series of segments shown in exploded view in FIG. 3. Thus, if all of the sections 10 and 10' are positioned in the orientation shown in FIG. 3 and moved toward each other to a nested position, the various angularly spaced pins and apertures would match and the puzzle game would be assembled as shown in FIGS. 1 and 2, with all of the pins and apertures matched in proper alignment.
Obviously, the pin-and-aperture-type interengaging surfaces are a preferred embodiment. Other types of interengaging surfaces might be employed. In addition, numerous keys may be provided, with the incremental positions of the interengaging pin and aperture surfaces unevenly paced angularly about the marginal periphery of the wall portion 18 of the sections 10 and 10'. Furthermore, the pins and apertures may be nonuniformly spaced from the center of the disc-shaped sections. These specific examples are merely other embodiments within the total concept of the present invention.

The foregoing detailed description has been given for clearness of understanding only and no unnecessary limitations should be understood therefrom as some modifications will be obvious to those skilled in the art.

I claim:

1. A puzzle-type game comprising a plurality of generally disc-shaped sections nestable end to end to form an elongated object, said sections having interengaging surfaces including at least one pin and one aperture, with each pin and aperture having a positional relationship on each section with a complementary aperture and pin on at least one, or more, but not all of the remaining sections, the apertures being of a size to receive their respectively matched pin and said complementary matching pins and apertures are spaced about the disc-shaped sections at different angular increments, whereby the sections must be properly matched so as to interengage and thereby nest all of the sections to form said elongated object.

2. The puzzle game of claim 1 wherein at least two of the properly matched sections have a plurality of complementary positioned pins and apertures.

3. The puzzle game of claim 2 wherein at least one of the sections has a pin extending from opposite sides thereof.

4. The puzzle game of claim 2 wherein at least one of the sections has a plurality of apertures.

5. The puzzle game of claim 2 wherein said pins and apertures on all sections are equally spaced from the center of the disc-shaped sections.

6. The puzzle game of claim 2 wherein the endmost sections, when nested, have convex outer surfaces.
UNUNITED STATES PATENT OFFICE
CERTIFICATE OF CORRECTION

Patent No. 3,630,527 Dated December 28, 1971

Inventor(s) Jeffrey D. Breslow

It is certified that error appears in the above-identified patent and that said Letters Patent are hereby corrected as shown below:

Column 1, line 24, "surface" should be "surfaces";
Column 2, line 28, "enter" should be "center";
Column 3, line 5, "paced" should be "spaced"; and
Column 4, add the following claim. --7. A puzzle-type game comprising a plurality of generally cylindrical nestable segments each having a periphery of generally identical portions to form an elongated object having a continuous surface, said segments including pin and aperture type interengaging means with said apertures being formed in said segments and being of a size and shape to receive said pin means therein, said interengaging means being disposed about the axial center of the segments at different angular positions, each segment being provided with pin means and/or aperture means positioned thereon for cooperative engagement with complementary pin means and/or aperture means
It is certified that error appears in the above-identified patent and that said Letters Patent are hereby corrected as shown below:

of at least one, but not all, the remaining segments, whereby the segments must be properly matched so as to interengage and thereby nest all of the sections to form said object.

Signed and sealed this 12th day of December 1972.

(SEAL)
Attest:

EDWARD M. FLETCHER, JR.
Attesting Officer

ROBERT GOTTSCALK
Commissioner of Patents