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(71) Applicant(s) Afzaal Ahmed 14 Winchcombe Place, High Heaton, NEWCASTLE-UPON-TYNE, NE7 7AX, United Kingdom	(56) Documents Cited DE 020001261 A US 5860650 A US 3538632 A
(72) Inventor(s) Afzaal Ahmed	(58) Field of Search UK CL (Edition V) A6H INT CL ⁷ A63F Other: ONLINE: EPODOC, WPI, JAPIO, TXTE
(74) Agent and/or Address for Service Afzaal Ahmed 14 Winchcombe Place, High Heaton, NEWCASTLE-UPON-TYNE, NE7 7AX, United Kingdom	

(54) Abstract Title
Jigsaw Puzzle

(57) A jigsaw puzzle includes lenticular material laminated onto a foam substrate such that the whole object is compressible in a direction perpendicular to the laminated planes when pressure is applied normal to the laminated planes to cut them into a plurality of pieces. Preferably, a printed lenticular image so laminated is die-cut into a plurality of interlocking pieces.

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JIGSAW PUZZLE

This invention relates to a puzzle that consists of a laminated lenticular image dissected in to a plurality of pieces of similar or differing shapes that interlock when assembled to form a completed whole once more.

Such puzzles have presented a problem in the process of their manufacture when the lenticular image has been laminated on to a substrate such as cardboard. The two said layers have a tendency to delaminate either at the surface of contact between them or within the substrate, where the cut has taken place, when die-cut in to a plurality of pieces. This is due to the incompressibility of the whole object when pressure is applied during the die-cutting step.

An object of this invention is to provide a puzzle consisting of a laminated lenticular image die-cut in to a plurality of pieces that retain their structural adhesion, form and integrity when die-cut, without the occurrence of delamination either between or within the layers that make up each piece.

According to the present invention a puzzle is provided that consists of a sheet of lenticular material laminated on to a foam substrate, using an appropriate adhesive, such that the whole object is compressible when pressure is applied normal to the laminated layers for the purpose of cutting them in to a plurality of pieces.

The substrate material is chosen such that it has compatible properties to that of the sheet of lenticular material to which it is laminated so that the two said materials are able to function together when being cut in to puzzle pieces.

A specific embodiment of the invention will now be described by way of example.

A sheet of lenticular material bearing a single or multiple images is laminated on to a layer of self-adhesive foam of a preferred thickness, density and colour.

After adhesion of the two said layers has taken place, the whole object is set up to be die-cut in to a plurality of pieces by being placed on a flat horizontal surface with the lenticular side facing the cutting blades.

As the cutting blades, surrounded by an ejection rubber, move in a vertical direction perpendicular to and towards the plane of the laminated lenticular, pressure is applied to the whole object on impact with the result that the foam layer is compressed before the said layers are die-cut in to pieces.

The said compression reduces the height of the whole object in the vertical plane to be cut and prevents the pieces of the laminated lenticular from moving too far in to the spaces between the cutting blades, which narrow a short distance away from the cutting edge. This in turn prevents the lenticular layer from lifting off the foam layer during the die-cutting process.

Once die-cut, the puzzle pieces between the blades are ejected out by the ejection rubber and the foam layer decompresses to its original state.

CLAIMS

1. A jigsaw puzzle comprising a sheet of lenticular material laminated onto a foam substrate, using an appropriate adhesive, such that the whole object is compressible when pressure is applied normal to the laminated layers for the purpose of cutting them into a plurality of pieces.
2. A jigsaw puzzle according to Claim 1 wherein the laminated layers are cut into a plurality of pieces using the die-cutting method.
3. A jigsaw puzzle according to Claim 1 or Claim 2 wherein the lenticular material used is printed such that a single or multiple images can be seen in sequence when viewed from different angles to the normal from the front of the lenticular plane.
4. A jigsaw puzzle according to any preceding claim wherein the plurality of pieces are interlocking.
5. A jigsaw puzzle substantially as described herein.



INVESTOR IN PEOPLE

Application No: GB 0126463.9
Claims searched: 1-5

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Patents Act 1977 : Search Report under Section 17

Documents considered to be relevant:

Category	Relevant to claims	Identity of document and passage or figure of particular relevance
Y	1,2,4	US 5860650 (SCOBIE et al) Whole document
Y	1-4	US 3538632 (ANDERSON) Whole document
Y	1, 3	DE 20001261 U (PRIS MOTION GMBH) see WPI Abstract Accession No 00-432620

Categories:

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Field of Search:

Search of GB, EP, WO & US patent documents classified in the following areas of the UKC^v:

A6H

Worldwide search of patent documents classified in the following areas of the IPC⁷:

A63F

The following online and other databases have been used in the preparation of this search report:

EPODOC, WPI, JAPIO, TXTE