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(56) Documents Cited:
US 20090098328 A
Pop-Up Cards, web catalogue

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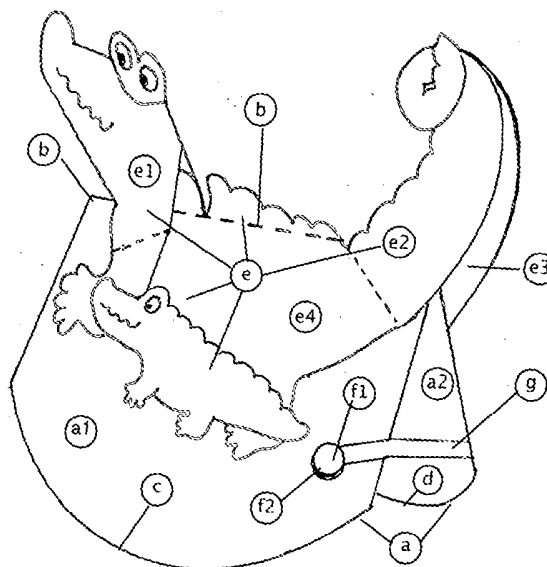
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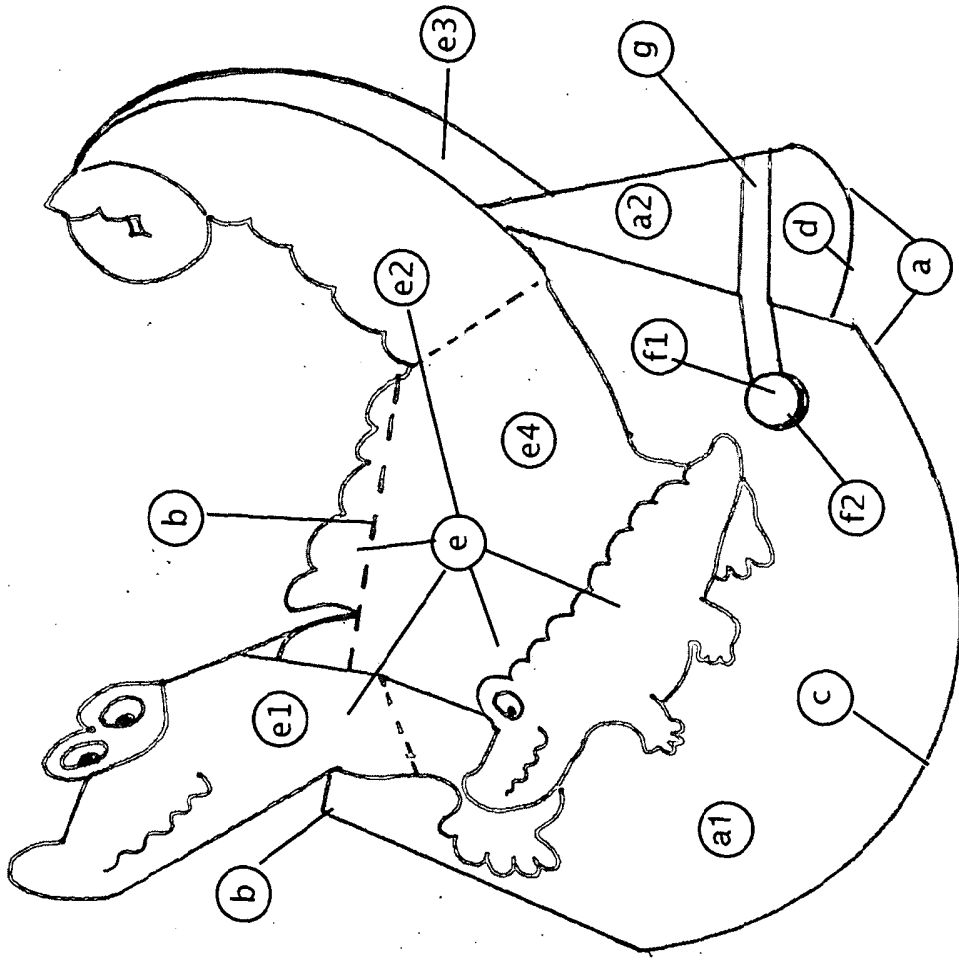
(54) Title of the Invention: **Three dimensional structure, pop-up device**
Abstract Title: **Three dimensional structure, pop-up device**

(57) A foldable three dimensional card is constructed from foldable material such as card or plastic, comprising of a supporting base sheet (a) divided by a fold line (b) into two equal halves (a1) and (a2) each with a curved edge (c) and (d) running along their length. A pop-up (e), representing a figure or structure of any kind, is mounted and fixed on top of (a) so that its folding axis is aligned with the horizontal center-fold (b) so that the pop-up opens up and folds flat in concert with fold (b) and base sheet (a).

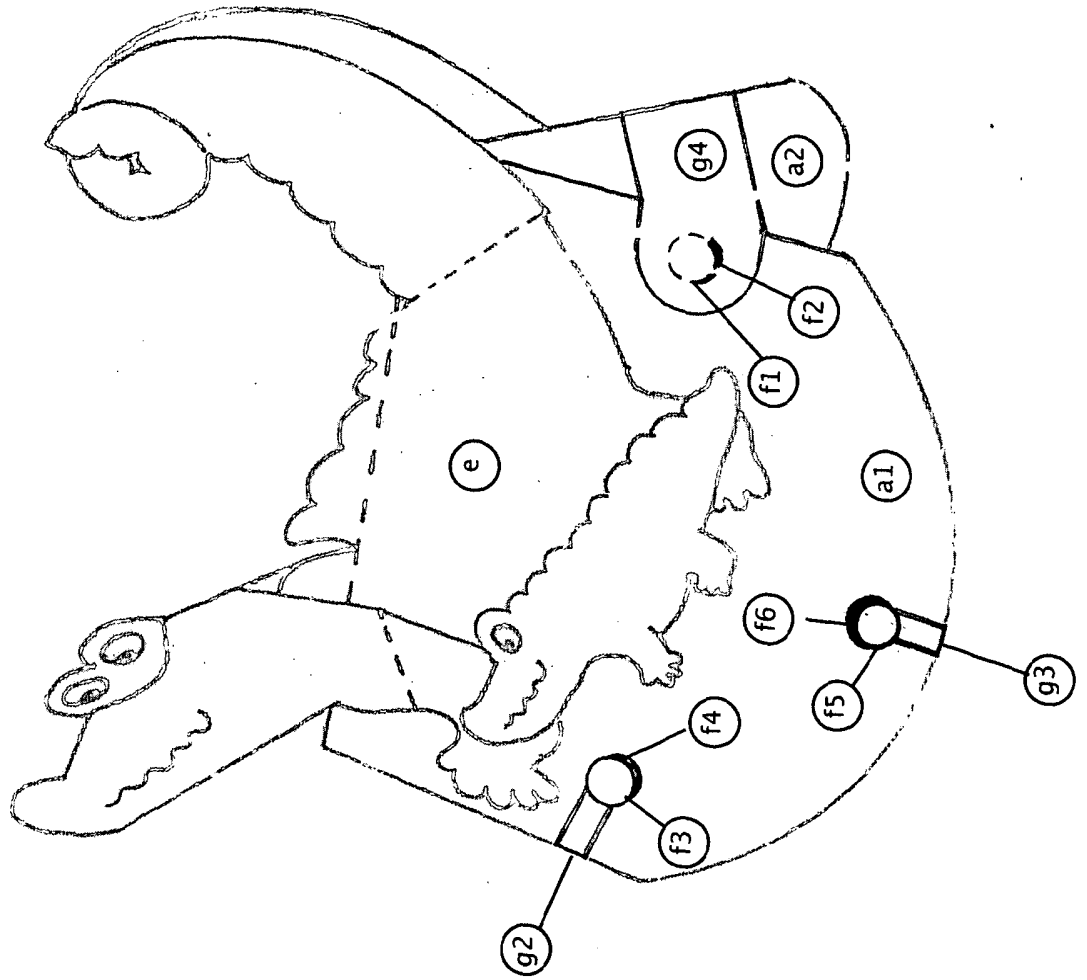
When the base sheet is folded back on itself as intended, with curved edges (c) and (d) resting on the surface, the pop-up rises in part above the level of the horizontal fold line (b) and the card forms a self-supporting upright structure when held in place by a strap (g) and a releasable fastner (f1) and (f2). Now the card becomes a device that can be rocked to and fro and played with.



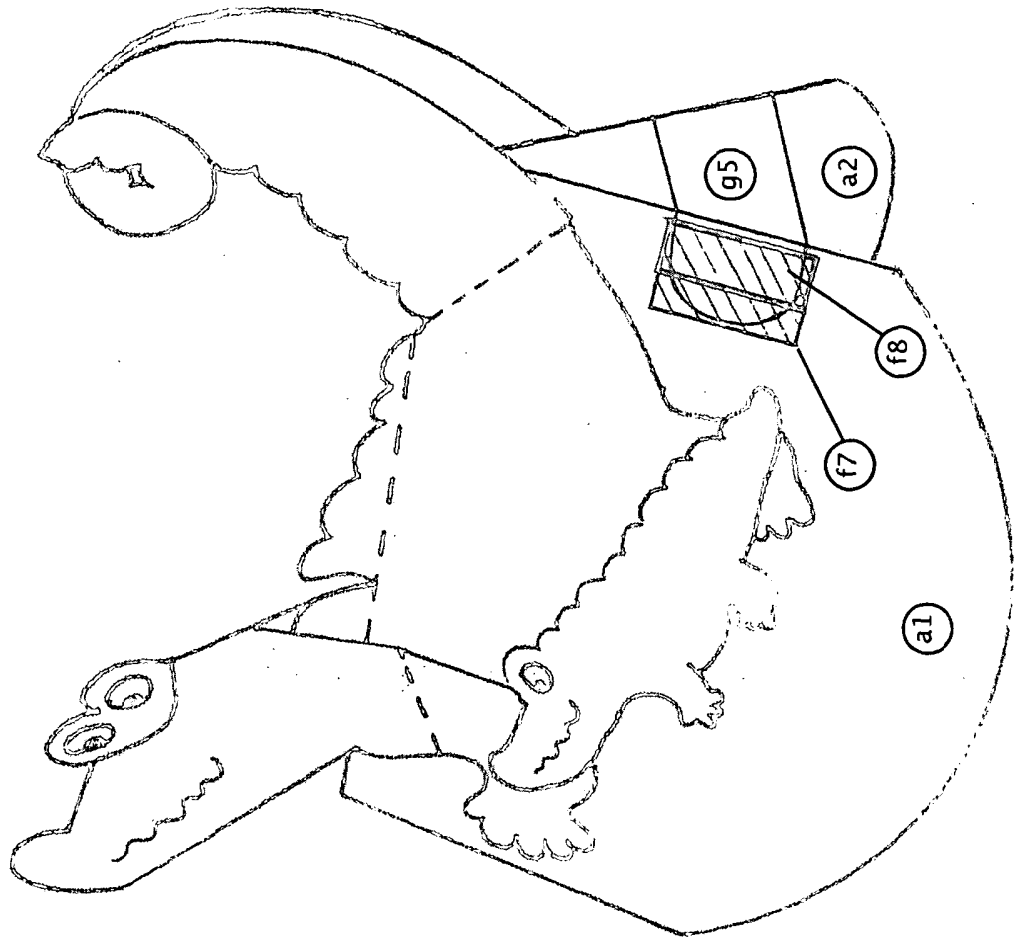
Three dimensional structure - Crocodile pop-up device
Drawing No 1A - Annotated guide



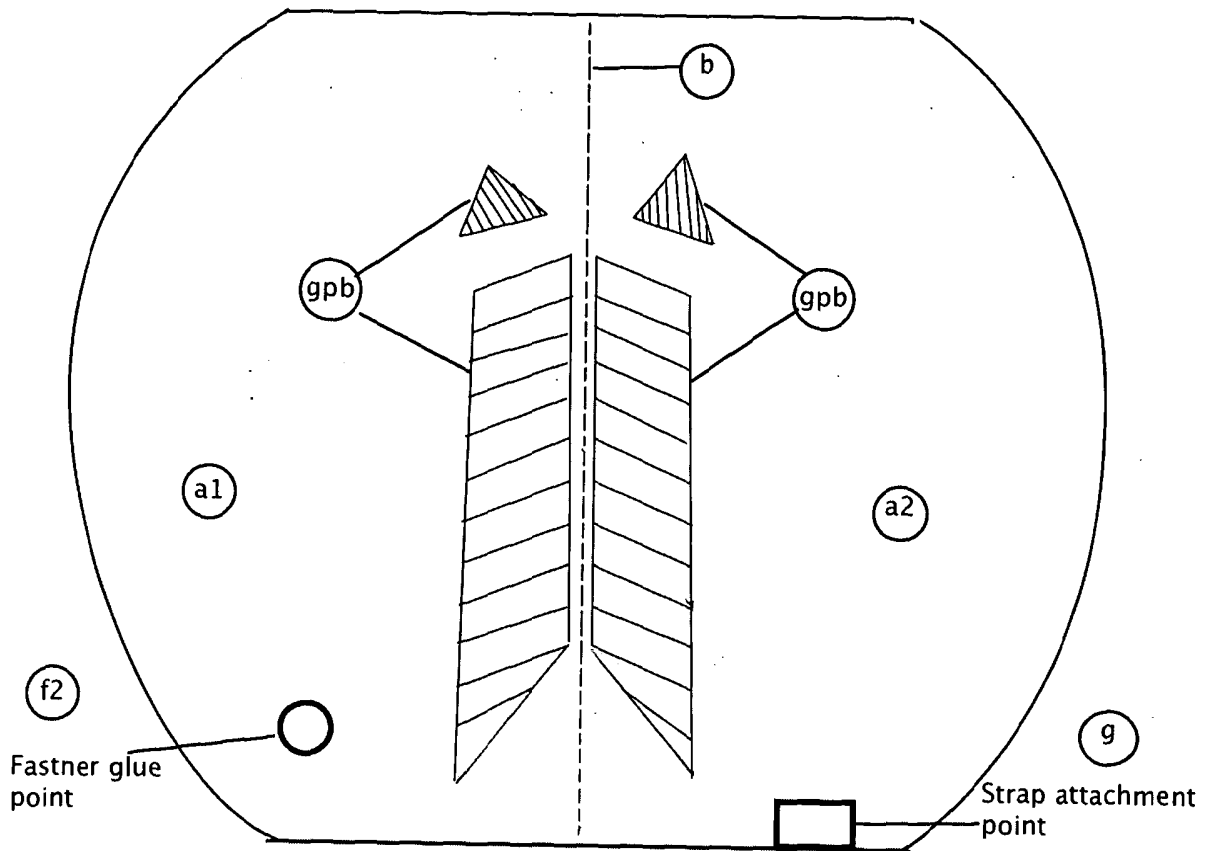
Three dimensional structure – Crocodile pop-up device
Drawing No 1B – Annotated guide – additional fastenings



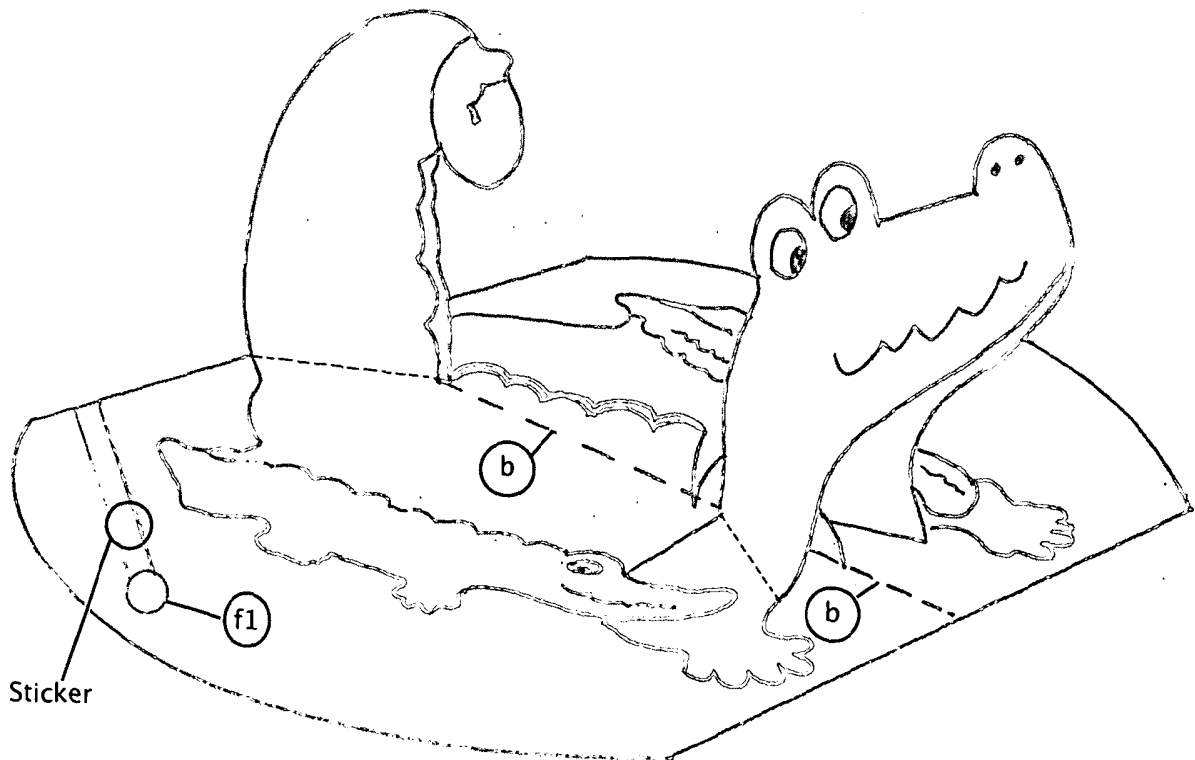
Three dimensional structure - Crocodile pop-up device
Drawing No 1C - Annotated guide - additional fastenings



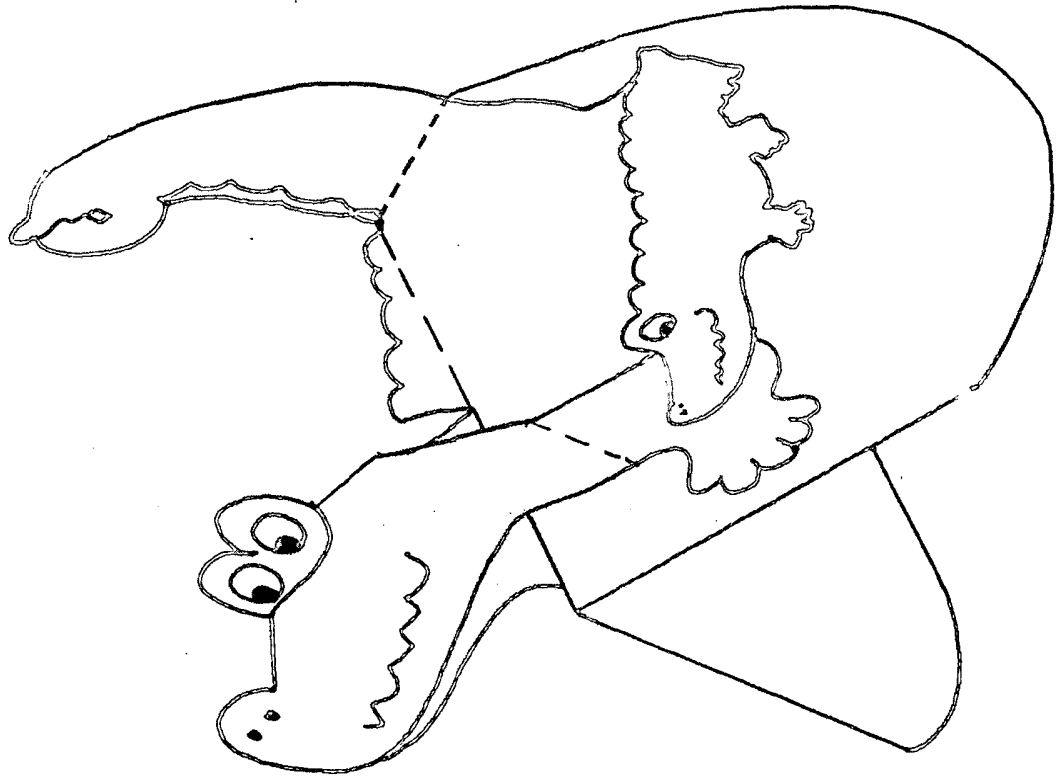
Three dimensional structure - Crocodile pop-up device Drawing No 2 - Glue points plan



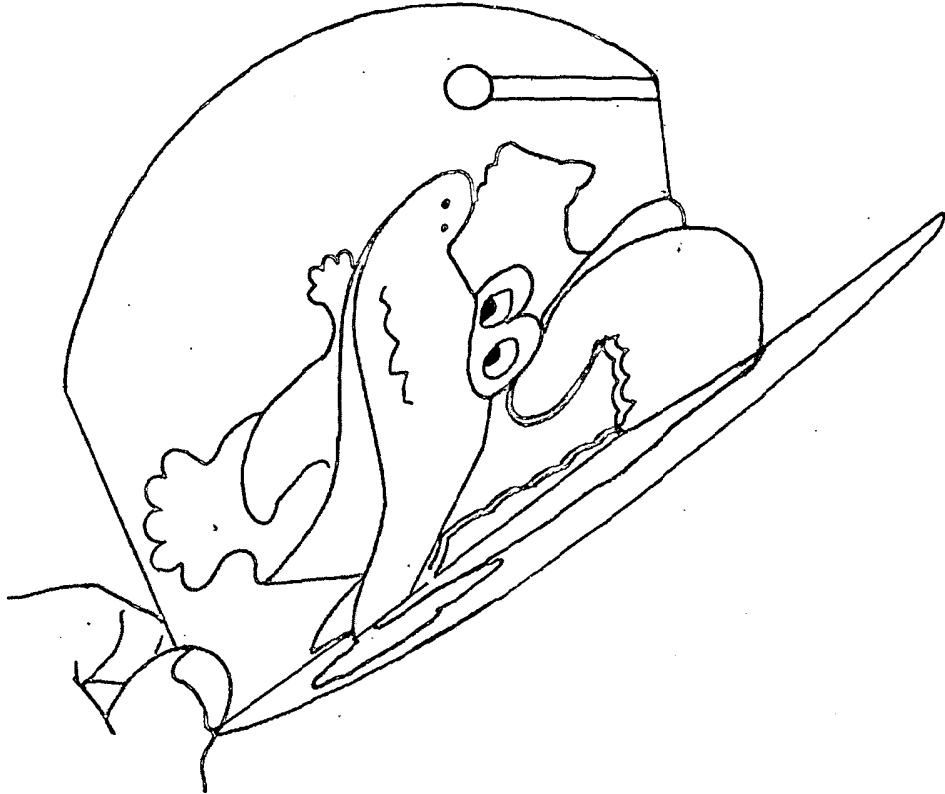
Crocodile pop-up device Drawing No 3 - Flat display



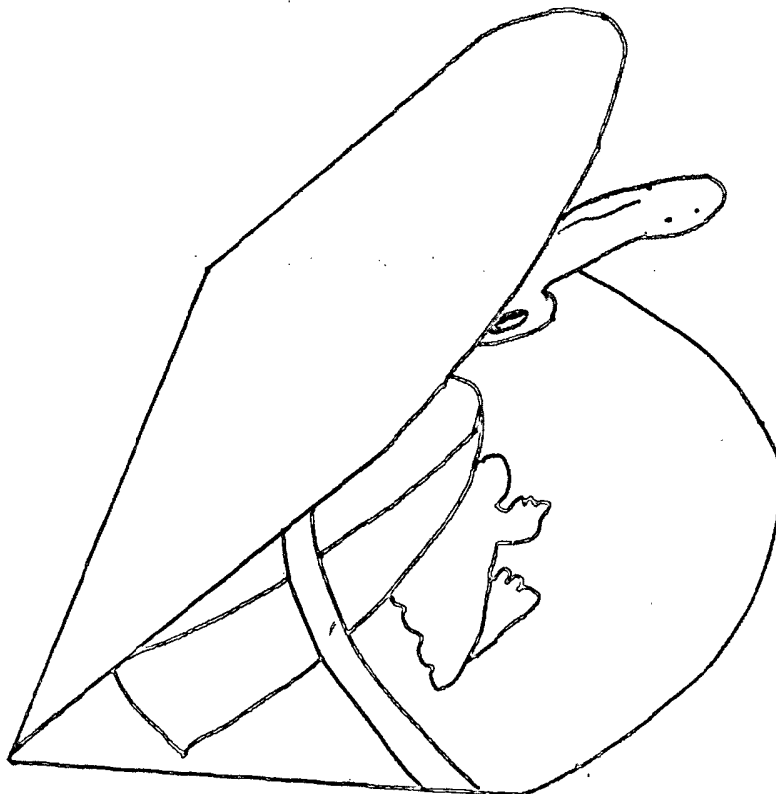
Three dimensional structure - Crocodile pop-up device
Drawing No 4 - Front 3/4 view



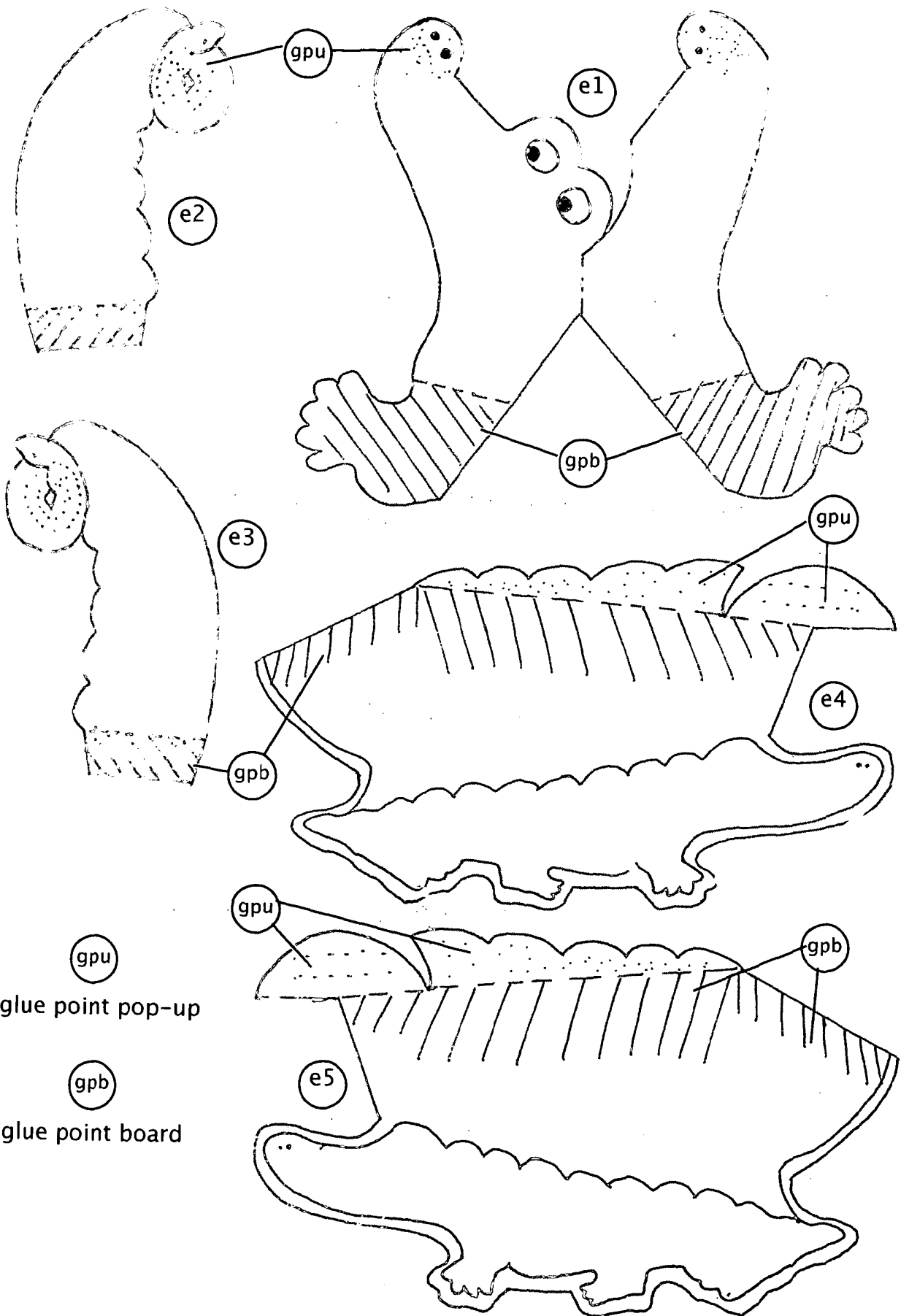
Three dimensional structure - Crocodile pop-up device
Drawing No 5 - Opening / closing card



Crocodile pop-up device
Drawing No 6 - Opening / closing card



Three dimensional structure - Crocodile pop-up device
Drawing No 7 - Pop-up parts - (e)



Three dimensional structure, pop-up device.

The purpose of the pop-up device I have invented is to provide the vehicle for a message as well as a device to entertain.

The three dimensional pop-up device can be a greeting card, or any kind of device that has an advertising, editorial or educational purpose, that can be delivered flat but when opened and fastened with a strap and secured in a self supporting configuration becomes a rocking pop-up toy or decorative ornament that can be played with, admired and placed somewhere as an ornament that can be rocked to and fro.

It thus has two functions, the delivery of a message, for instance a greeting as a greeting card or promotional message as an advertisement and then, entertainment, converted into a rocking toy or rocking ornamental device, adorned with a pop-up structure of any shape or kind as required by the purpose of the message and purpose of the device as a whole.

Although it's function has been described as delivering a message as well as being a device to entertain by virtue of it's surface printed with images and text, it can also be made with the sole purpose of being a pop-up rocking card, toy or device, to be played with and to entertain with a printed surface image but unadorned with any message or text.

In addition, as an alternative the device can be made completely unadorned simply as a plaything that can be rocked with no surface printing at all. Only the shape and construction when assembled in the manner and style of drawings 1 to 7. provide an identity for the device.

The device is assembled and constructed as follows:

Drawing no 1A and Drawing no 2

A foldable three dimensional card comprising of a supporting base sheet made of one or more pieces (a) which is scored with a horizontal fold line (b) running the full length along it's center, is divided into two equal halves (a1) and (a2) each with a curved edge (c) and (d) running along their length. This base board and the whole pop-up device can be made from any suitable foldable material including card and plastic but not excluding other materials.

The curved edges to the two halves of the base sheet are the edges on which the device rocks when encouraged to do so by hand.

Although in **Drawing 1A** the two edges (c) and (d) are identical running along the full width of the folded card the curved edges do not have to be identical or run the full length of the folded half of the card. Unidentical curved edges can be used to provide a rocking motion with irregular motion from side to side as the card rocks.

A pop-up figure (e), **Drawing 1A**, though representing a crocodile in these drawings, made of five die-cut pieces **Drawing No 7**, can be any other figure, object, structure or symbol of any kind, whether representing something natural, man-made or fictional, of any number of parts, with any number of required glue points. Any practical manner of fixing the pop-ups to the base board or to themselves may be used apart from glue including for example double-sided tape but not excluding any other type of fixing.

The card can also have moveable parts on the pop-up either as suspended shapes on string, card or any other suitable material or as flaps and die-cut pieces and parts that can be lifted and opened or moved.

The crocodile example in these drawings is mounted on top of the base sheet (a), so that its folding axis is aligned with the horizontal center fold (b), of the base sheet. In this case the spine of the crocodile is exactly aligned with the horizontal fold line of the card (b) **Drawing No 3** and the additional folds on the pop-up parts (e1) and (e2) of the crocodile by virtue of the angle they are fixed to the base board will fold in with the body of the card when the card is closed see **Drawings No 5 and No 6**. Thus, with the pop-up so aligned, the pop-up folds in concert with the center fold (b) so when the card is closed it folds flat and when the card is opened it rises and opens as a three dimensional pop-up form.

When the card is opened the pop-up is raised up in part, above the level of the horizontal fold (b) and when the two halves of the base board are folded back on themselves and joined together by any of straps (g), (g2), (g3), (g4), (g4), and (g5) **Drawing 1A, 1B and 1C** and a releasable fastener (f1), (f2), (f3), (f5) and (f7 or f8) the card becomes a self supporting three dimensional device that can be rocked to and fro and played with. For views of assembled card in upright rocking configuration see **Drawings 1A and 4**.

The straps can be of any number and **Drawings 1A, 1B and 1C** illustrate in the examples (g), (g2), (g3), (g4) and (g5) a number of alternative solutions. The straps themselves can be made of any suitable material

Including ribbon, plastic, paper, card and cloth of any kind, that is strong enough and flexible. At the end of the straps releasable fastening devices, such as velcro fasteners, magnetic fasteners, snap-fit fasteners, hook and loop fasteners, press-stud fasteners or any other releasable are fixed so that they can be attached to their corresponding fastener part attached to the other half of the base board.

In the case of the straps on **Drawing No 1C** where stiff but flexible materials are used as clasps that slide either into a pocket f7 or under a band f8 to be held in place, card or any material that is stiffer though not rigid can be used. In the case of these two alternative fasteners to hold the two halves of the base board together, there are no fasteners at the end of the straps.

Drawings enclosed:

Drawing No no 1 A :

Three-quarter side view from rear, upright, assembled annotated guide
Pop-up parts, strap, fastening and base board

Drawing No 1B:

Three-quarter side view from rear, upright assembled annotated guide
Additional fastenings and strap

Drawing No 1C:

Three-quarter side view from rear, upright assembled annotated guide
Additional fastenings and strap

Drawing No 2:

Plan view. Glue points

Drawing No 3:

Flat opened three-quarter view. Folds, strap fixing and fastener

Drawing No 4:

Three-quarter front view, upright assembled

Drawing No 5:

Front end view. Opening closing card

Drawing No 6:

Rear end view. Opening closing card

Drawing No 7:

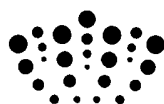
Individual Pop-up parts

Claim -

- (1) A foldable three dimensional card is constructed from a foldable material such as card or plastic, but not excluding other suitable materials, comprising of a supporting base sheet (a) divided by a fold line (b) scored down the centre, into two equal halves (a1) and (a2) each with a curved edge (c) and (d) running along their length with a pop-up (e), representing a figure or structure of any kind mounted and fixed on top of (a) so that the pop-up folds flat or opens up in concert with fold (b) and base sheet (a) which, when folded back on itself, with curved edges (c) and (d) resting on the surface, raises the pop-up in part, above the level of the horizontal fold and thus, held in place by a strap (g) and a releasable fastener (f1) and (f2) the card becomes a device that can be rocked to and fro and played with.
- (2) The card of claim 1 where the base is formed of one piece or more
- (3) The card of claim 2 where the base is divided equally into two halves by a single horizontal longitudinal score to form a fold line.
- (4) The card of claim 3 where the two halves of the base have matching curved edges along their entire length
- (5) The card of claim 3 where the the two halves of the base do not have exactly matching curved edges along their entire length
- (6) The card of claim 4 and claim 5 where the two halves of the base have curved edges but not along their entire length
- (7) The card of claim 4 where a pop-up figure of a crocodile is mounted on top of the base with it's longitudinal folding axis aligned with the longitudinal center fold (b) of the base
- (8) The card of claim 4, 5, and 6 where a pop-up figure representing a model of any kind or subject is mounted on top of the base with it's longitudinal folding axis aligned with the longitudinal center fold (b) of the base.
- (9) The card of claim 7 where the pop-up is made of 5 die-cut parts
- (10) The card of claim 9 where the pop-up parts are joined together at three points

- (11) The card of claim 8 where the pop-up is made of any number of die-cut parts
- (12) The card of claim 11 where the pop-up is joined together at any number of points
- (13) The card of claim 12 where the pop-up has moving and moveable parts of any number
- (14) The card of claim 10 where the pop-up is glued onto the base with six glue points
- (15) The cards of claim 12 and 13 where the pop-up is glued onto the base with any number of glue points.
- (16) The cards of claim 14 and 15 where where the pop-up is fixed onto the base with double-sided tape
- (17) The cards of claim 14 and 15 where the pop-up is fixed onto the base by any other means not aforementioned.
- (18) The cards of claim 14, 15, 16, and 17 where the two halves of the base card are folded back on themselves to be joined and held in place by a fastening device to achieve an assembled free standing structure or device.
- (19) The cards of claim 18 where the fastening device consists of a strap which is a ribbon, (g), glued at one end to one half of the base board (a2) with part of a releasable fastner (f1), attached to the other end of the ribbon see **Drawing 1A**
- (20) The cards of claim 18 where the fastening device consists of two ribbons (g) and (g2), one at each end of the card, glued to, one half of the base board (a2) with part of a releasable fastner (f1) and (f3), attached to the other end of each ribbon, **Drawing No 1A and 1B**
- (21) The cards of claim 18 where the fastening device consists of one ribbon (g3), attached to the middle of the width of (a2) at one end with part of a releasable fastner (f5), attached to the other end of the ribbon to fastens on a corresponding spot(f6), on the other half of the base board

- (22) The cards of claim 19, 20 and 21 where the fastening device consists of a strap of cloth, card, plastic or any other flexible material of any width attached to one half of the base board at one end with part of a releasable fastener (f1), (f3) and (f5) attached to the other end of the strap
- (23) The cards of claim 19 and 20 where the fastening device consists of a strap of card, plastic or any other stiff but foldable material of any width (g5) attached at one end to half the base board **Drawing 1C**
- (24) The cards of claim 23 where the unattached end of the fastening straps are held in place by small pockets (f7) on base board a1
- (25) The cards of claim 23 where the unattached end of the fastening straps slide under bands (f8) and are held in place on base board a1
- (23) The cards of claim 19, 20, 21 and 22 where the mating half of the fastener f2, f4 and f6 is attached to the other half of the base board (a1) see **Drawing No 1B**
- (23) The cards of claim 18,19,20,21, and 22 where the fastening means is a velcro fastener (RTM)
- (24) The cards of claim 18,19,20,21 and 22 where the fastening means is a magnetic fastener
- (25) The cards of claim 18,19,20,21 and 22 where the fastening means is a snap-fit fastener
- (26) The cards of claim 18,19,20,21 and 22 where the fastening means is a hook and loop fastener
- (27) The cards of claim 18,19,20,21 and 22 where the fastening means is any other fastener not aforementioned



Application No: GB0900371.6

Examiner: Mr Tony Rudge

Claims searched: 1-27

Date of search: 21 May 2010

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	all	Pop-Up Cards, web catalogue retrieved from the Internet, URL:>http://www.petrinacase.com/prod02PopUp.htm - see item numbers 180
Y	"	US2009/098328 A (BENNETT) - eg. paragraph [0003]

Categories:

X	Document indicating lack of novelty or inventive step	A	Document indicating technological background and/or state of the art.
Y	Document indicating lack of inventive step if combined with one or more other documents of same category.	P	Document published on or after the declared priority date but before the filing date of this invention.
&	Member of the same patent family	E	Patent document published on or after, but with priority date earlier than, the filing date of this application.

Field of Search:

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

Worldwide search of patent documents classified in the following areas of the IPC

B42D; G09F

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

EPODOC, WPI, TXTE, INTERNET

International Classification:

Subclass	Subgroup	Valid From
B42D	0015/04	01/01/2006
G09F	0001/08	01/01/2006