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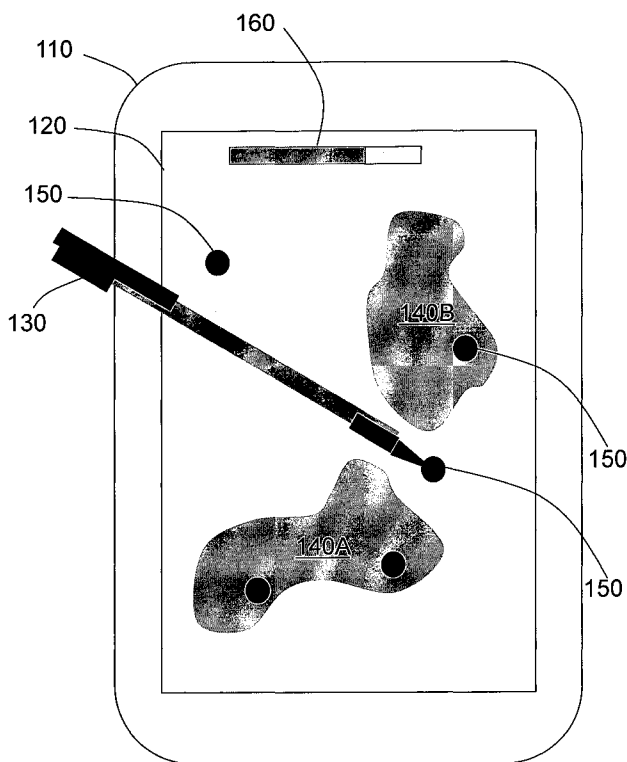
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FIG. 1



(57) Abstract: An action-type computer game with new rules and strategies is presented and involve the interaction with moving and transforming objects. A morphing engine continuously transforms a object's shape to another shape on a display. An energy dot engine releases energy dots onto the display. The player wins the game when the object or object parts disappear(s) from the display. The player loses the game when the size of the object reaches the size of the display. The objective for the player is to capture the energy dots when they have entered inside the object and to cutt off object parts that contain one or more energy dots. Each of the cut-off parts of the object either disappears from the display or reunites with the object depending on a set threshold, making this a challenging game.

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# **AN ACTION GAMING METHOD FOR INTERACTING WITH MOVING AND TRANSFORMING OBJECTS**

BY

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## **FIELD OF THE INVENTION**

10 The present invention relates generally to action games. In particular, the invention is related to computer-implemented methods for pen-based or pointer-based computing whereby players or users can interact with moving and transforming objects.

## **BACKGROUND OF THE INVENTION**

15 An action game is a game that challenges a player's speed, dexterity, and reaction time. Action games often include tactical conflict, exploration challenges, and puzzle-solving, but these are not defining elements. Action games are the broadest and most inclusive genre in gaming, encompassing many diverse sub-genres. The present invention introduces a new computer game for a wide variety of computer devices  
20 and introduces new rules and strategies to the art of action games.

## SUMMARY OF THE INVENTION

The present invention is a new computer game that can be played on e.g. smartphones, game consoles, handheld gaming consoles, PCs, special purpose gaming devices, or the like. New rules and strategies are presented and involve the  
5 interaction with moving and transforming objects.

The centerpiece in the game is a two-dimensional object (referred to as “The Bubble”) that is capable over a period of time of changing its shape, size, form and moving across a display, interacting with other objects and interaction with the borders of the  
10 display. A morphing engine is implemented that is capable of continuously transforming The Bubble object shape to another shape. These transformations occur when the The Bubble is continuously moving on the display of the device.

Each Bubble object defines an internal area and an external area. The external area is  
15 defined between the inner borders of the display and the outer borders of the object. An energy dot game logic is implemented that is capable of releasing (or entering) one or more energy dots onto the display. Each of the energy dots is capable of: (i) appearing on the display in the external area around the object, (ii) entering through the object border into the internal area of the object, (iii) bouncing off the internal  
20 borders of the object once in the internal area, and (iv) causing the object to grow in size once in the internal area.

A player through means of a pointer is capable of (i) capturing the energy dots or (ii) cutting off parts of the object that contain one or more energy dots. Each of the cut-

off parts of the object either disappears from the display or reunites with the object depending on a set threshold or the rules of the game.

5 A chain-saw fuel engine is implemented for allowing the player to (i) perform cutting off parts of the object containing one or more energy dots or (ii) capture one or more energy dots. The amount of chain-saw fuel consumed is a function of the amount of time spent cutting off the object parts. The amount of chain-saw fuel increases when one or more of the energy dots have been captured in the internal area of the object. The amount of chain-saw fuel decreases when one or more of the energy dots have  
10 been captured in the external area of the object. The player wins the game when the object or object parts disappear(s) from the display. The player loses the game when the size of the object reaches the size of the display.

### BRIEF DESCRIPTION OF THE FIGURES

15 The present invention together with its objectives and advantages will be understood by reading the following description in conjunction with the drawings, in which:

**FIG. 1** shows according to an exemplary embodiment a handheld device displaying the computed-implemented method of this invention.

20 **FIG. 2** shows according to an exemplary embodiment of this invention a object (The Bubble) with energy dots.

**FIG. 3** shows according to an exemplary embodiment of this invention the method of cutting off a part of a object (The Bubble) containing an energy dot.

25 **FIG. 4** shows according to an exemplary embodiment of this invention a object cut into two final parts.

## DETAILED DESCRIPTION

The present invention is referred to as “The Bubble” and is a computer-implemented method or interactive action game for pointer **130** (pen, stylus, fingertips, mouse or the like) based PDAs/hand-held computers, gaming consoles, PCs. **FIG. 1** shows an example of such a device **110** with a display **120**. An object morphing engine could display one or more objects **140A, B** (also referred to as The Bubbles) on display **120**. Each object **140A, B** defines an internal area within the borders of the respective object and an external area defined between the internal borders of display **120** and the outer border of the object. The object transforming engine dynamically changes the shape or form of each object into another shape. The transforming (morphing) engine could be based on the following methodology, either in any combination or separately:

- 1) The morphing engine or algorithm transforms the shape of The Bubble to either pre-defined shape(s), (pseudo-) randomly generated shapes or other methods. The result of the transformation is a new Bubble object of the same square size as the initial (or prior) Bubble object.
- 2) As the transformation progresses from one state to another state, the object properties or qualities are maintained. For example, the object can move across the display, rotate, change shape, and the parts could also be further cut into smaller object parts.
- 3) During the process of transformation(s) the square size object is maintained.
- 4) The square size of the object is automatically corrected in case of an action by the player and an interaction with other objects.

- 5) Cut-off parts could continue its independent morphing sequence that can differ from the main object.
- 6) Transformations don't change the moving or rotating of the object.
- 7) The transformation velocity is not linear and can change depending on the game situation and settings.
- 8) Transformation could assume attaching or detaching of the objects from the main object.
- 9) The object can be separated by parts without direct cutting following the game rules.

10

#### Game concept and Rules

To win the game a player shall cut off parts of The Bubble to make it disappear, while fighting against the Energy Dots **150** which are getting into The Bubble and make it grow bigger. If The Bubble gets to the size of the screen/display **120** then the player loses.

15

The Bubble game has the following main elements:

- The Bubble is a moving and transforming object (e.g. **210** in **FIG. 2**), constantly and smoothly changing its shape;
- Energy Dots **150**, small round objects, bouncing within the rectangle game area of, for example, display **120**, are the sources of energy; and
- A player's pen or other pointing device **130** is used to:
  - a) cut off parts of The Bubble (Chain-saw mode);
  - b) push The Bubble or parts of it; or
  - c) capture Energy Dots.

25

### The Bubble

As mentioned *infra*, The Bubble constantly changes its shape, but keeps the same square size. It can change by the following three events:

- 5           1) It can enlarge if The Bubble has been hit by an Energy Dot;
- 2) It can reduce if the Player 'cuts off' a part of it; and/or
- 3) It can blast if The Bubble loses its critical mass (becomes too small).

10           In one embodiment, the game starts with The Bubble (e.g. **210** in **FIG. 2**) floating in the center of the screen **120**. The shape constantly changes, but smoothly curved and the square size of The Bubble remains constant.

### Energy Dots

15           Initially The Bubble has several 'energy dots' floating inside it (i.e. **150** in **FIG. 2** marks 1 energy dot). The tracks (**220A-D**) of these energy dots are linear and once inside The Bubble they are bouncing from The Bubble's internal borders.

20           In, for example, a randomized period of time (1-5 seconds) a new Energy Dot could start off from outside of the screen and directed towards The Bubble (see e.g. **220A** in **FIG. 2**).

            If a player detects this energy dot and hits it with a pen (stylus) (or a mouse pointer) **130** the dot disappears and the player gets a raise in the level of available 'Chain-saw fuel'. A Chain-saw fuel indicator **160** is shown in **FIG. 1**.

25

If a player couldn't hit the Energy Dot, the energy dot could then enter The Bubble. As a result of accumulating more energy, The Bubble gets larger.

### Chain-sawing The Bubble

5 Chain-sawing The Bubble is a centerpiece of the game. A player can make The Bubble smaller by cutting-off **310** a part of The Bubble. The goal is to cut-off parts of The Bubble that has an energy dot **320** inside of it (**FIG. 3**, see also *infra*).

Depending on the area size of the detached portion the following can happen next:

- 10 1) If the cut-off area is too small to balance with the Energy dot, the detached portion will blast after a period of time. The more accurate a player cuts off the object part the less time is required waiting for the blast. The Bubble becomes smaller (The best outcome).
- 15 2) If the cut-off area is in balance with the Energy Dot, the detaches portion continues to float separately but will steadily be attracted to each the The Bubble. The Bubble then gets the size it was before the cut.
- 3) If the cut-off square area is too big than allowed by the game rules, the detachment is not possible. The detached parts re-unite immediately.

A player can use the pointer to push detached portion off The Bubble. This strategy  
20 may be necessary before this part blasts or to win some time before the parts re-unite.

In case the player cuts off an area without any Energy Dot in it, then this part re-unites with The Bubble immediately but the square size becomes bigger than it was before on a defined by the game rules percent.

25



The following limitations to cutting are applied:

- 1) Cutting consumes Energy (Accumulated by intercepting Energy Dots);
- 2) The longer the cut the more energy it consumes (Some progressive scale);
- 3) Too slow cutting doesn't work as the cut's sides open and then close back up;
- 5 4) Too quick cutting doesn't work as the pen/pointer "slides" without making a cut.

#### Winning/Losing

The Player wins the game if it can reduce The Bubble, so that further dividing it to the  
10 two parts **410A, B** that make both parts blast (**FIG. 4**) – "The final cut **420**". The  
Player loses if The Bubble grows to the size to reach dotted-lines boundaries of  
display **120**.

#### Games Strategies and Levels

15 During the game the player tries to locate the best shape and track for the cut (shortest  
path, with Energy Dot inside). When the cut is made the player pushes the parts apart  
(or away) from each other waiting for one or both to blast. The player tries to shoot  
(or capture) as many of the Energy Dots to maintain its energy level (Chain-saw fuel  
**160**) at the maximum. The game can be played at different levels, whereby each level  
20 introduces more sophisticated and less predictable trajectories for Energy Dots and  
The Bubble movements.

As one of ordinary skill in the art will appreciate, various changes, substitutions, and  
alterations could be made or otherwise implemented in either hardware and software  
25 without departing from the principles of the present invention. For example, over

time The Bubble could be cut in parts or can be slightly cut. If it is cut in parts, each part remain properties or qualities of The Bubble, e.g. the parts are capable of moving across the display, rotating, changing shape, and the parts could also be further cut into smaller Bubble parts. These parts of The Bubble could collide with each other and form joint and bigger Bubble objects. These parts of The Bubble could also disappear and/or appear in various parts of the display according to the rules of the game.

In another example, The Bubble can be cut in different ways. For example, The Bubble could be cut slowly in one move, or it could be cut with several small moves, depending on the specific implementation of the game. If the hardware platform supports multi-touch interaction, The Bubble object could be divided into parts by tearing its parts in different directions. If the hardware platform supports pressure sensors, The Bubble object could act in a specific way to reflect the different pressures applied to it. The Bubble edges created by cutting can also re-unite back if the velocity of cutting is not maintained in accordance to the rules or the changing of the shape of The Bubble.

In yet another example, interaction(s) of The Bubble with for example the outer borders/walls of the display, other parts of The Bubble or other objects on the display could cause the Bubble to change its velocity, rotation, shape. The Bubble could also break apart into parts as result of a collision or too fast movement.

Accordingly, the scope of the invention should be determined by the following claims and their legal equivalents.

## CLAIMS

What is claimed is:

- 5 1. A computer implemented gaming method of interacting with moving and transforming objects, comprising:
- (a) having a morphing engine continuously transforming an object's shape to another shape, wherein said object is continuously moving on a display, wherein said object defines an internal area and an external area, wherein  
10 said external area is defined between the inner borders of said display and the outer borders of said object;
- (b) having an energy dot engine releasing one or more energy dots onto said display, wherein said energy dots are capable of: (i) appearing on said display in the external area around said object, (ii) entering through the  
15 object border into the internal area of said object, (iii) bouncing off the internal borders of said object once in the internal area, and (iv) causing said object to grow in size once in the internal area; and
- (c) having a pointer allowing a player of: (i) capturing said energy dots or (ii) cutting off parts of said object that contain one or more energy dots,  
20 wherein each of the cut-off parts of said object either disappear from said display or reunite with said object depending on a threshold.
2. The method as set forth in claim 1, further comprising having a chain-saw fuel engine allowing said player to (i) perform said cutting off parts of said

object containing one or more energy dots or (ii) capture said one or more energy dots.

5 3. The method as set forth in claim 2, wherein the amount of said chain-saw fuel consumption is a function of the amount of time spent cutting off said object parts.

10 4. The method as set forth in claim 2, wherein the amount of said chain-saw fuel increases when one or more of said energy dots have been captured in the internal area of said object.

15 5. The method as set forth in claim 2, wherein the amount of said chain-saw fuel decreases when one or more of said energy dots have been captured in the external area of said object.

6. The method as set forth in claim 1, wherein the player wins the game when said object disappears from said display.

20 7. The method as set forth in claim 1, wherein the player loses the game when the size of said object reaches the size of said display.

FIG. 1

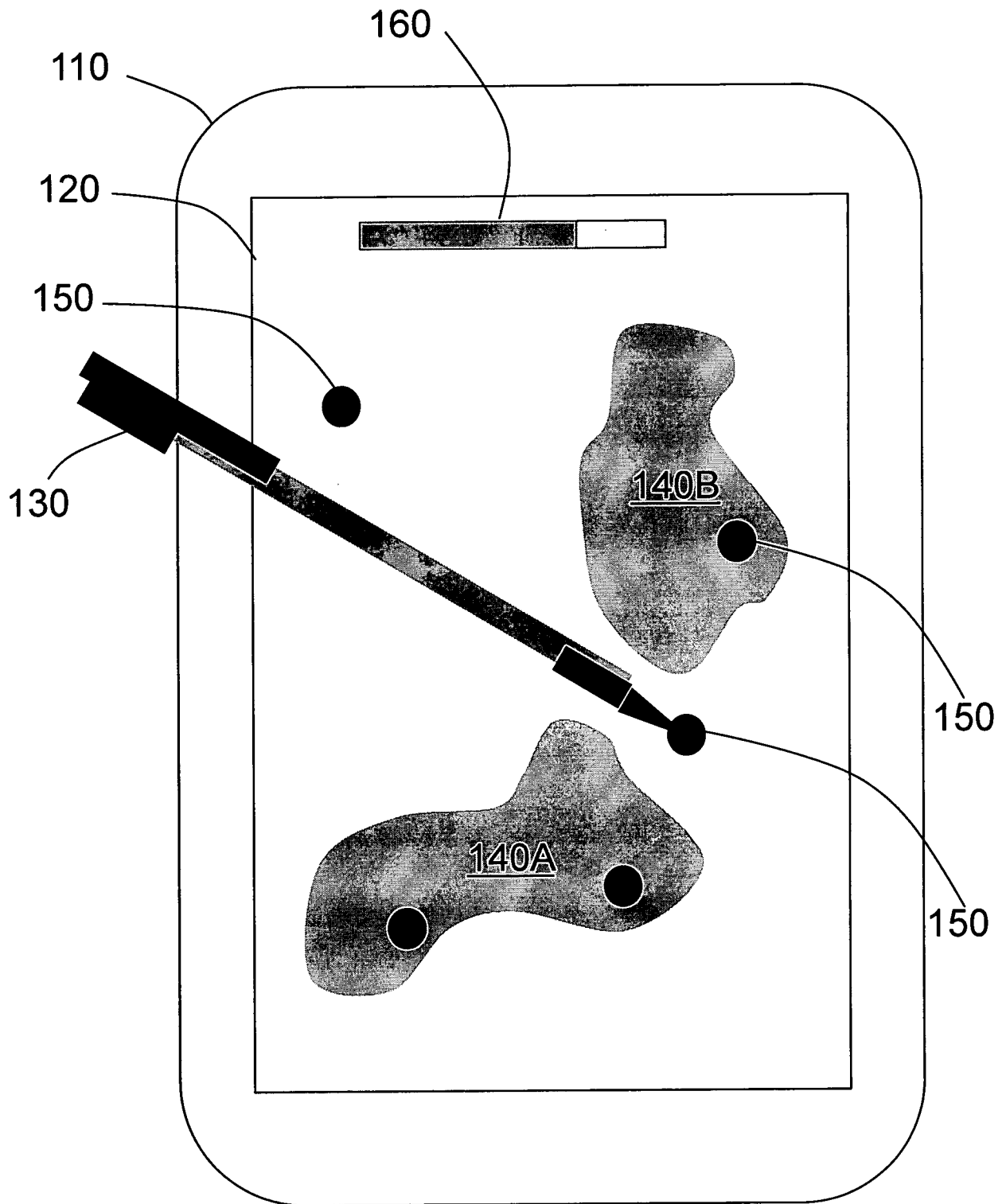


FIG. 2

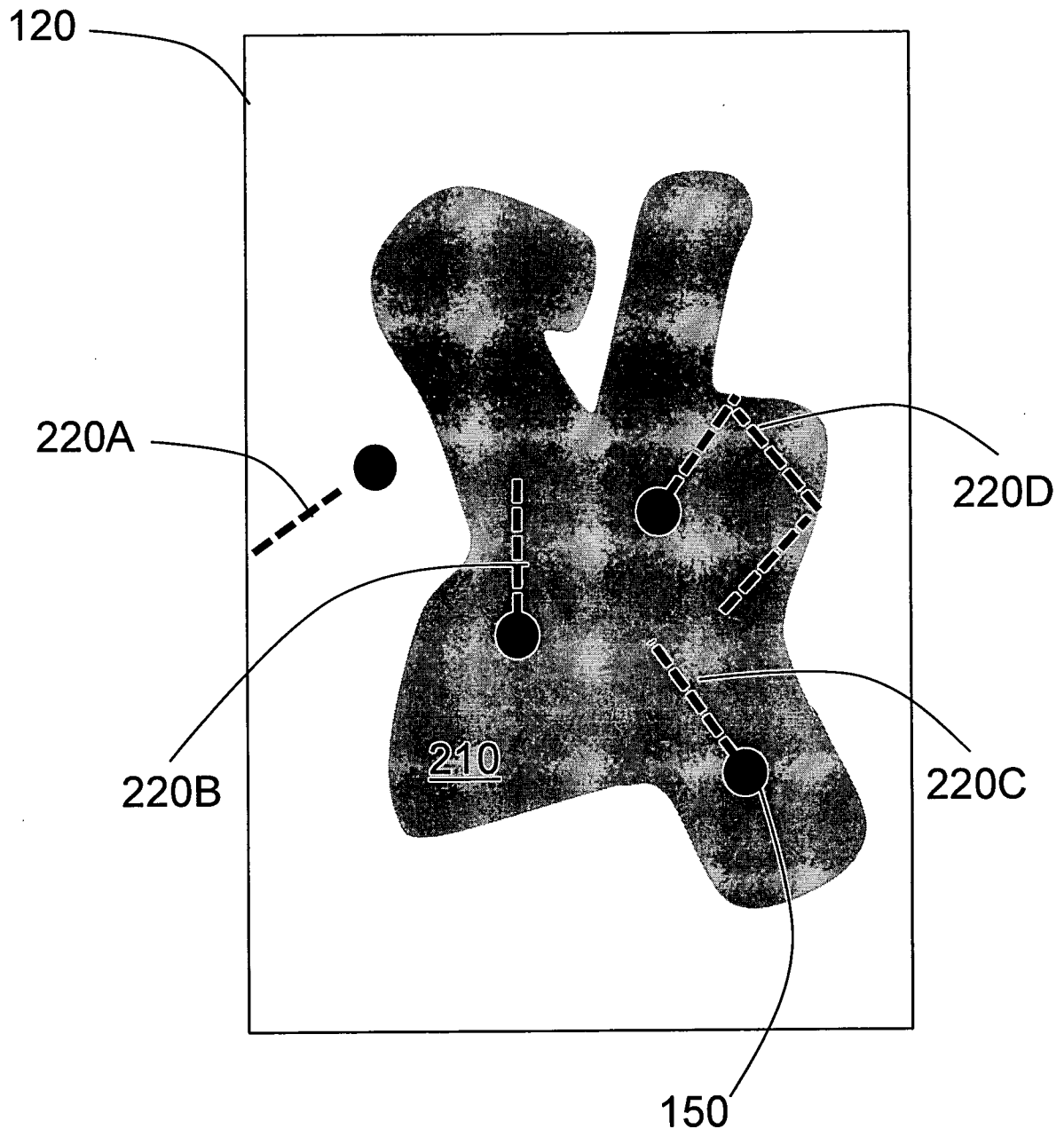


FIG. 3

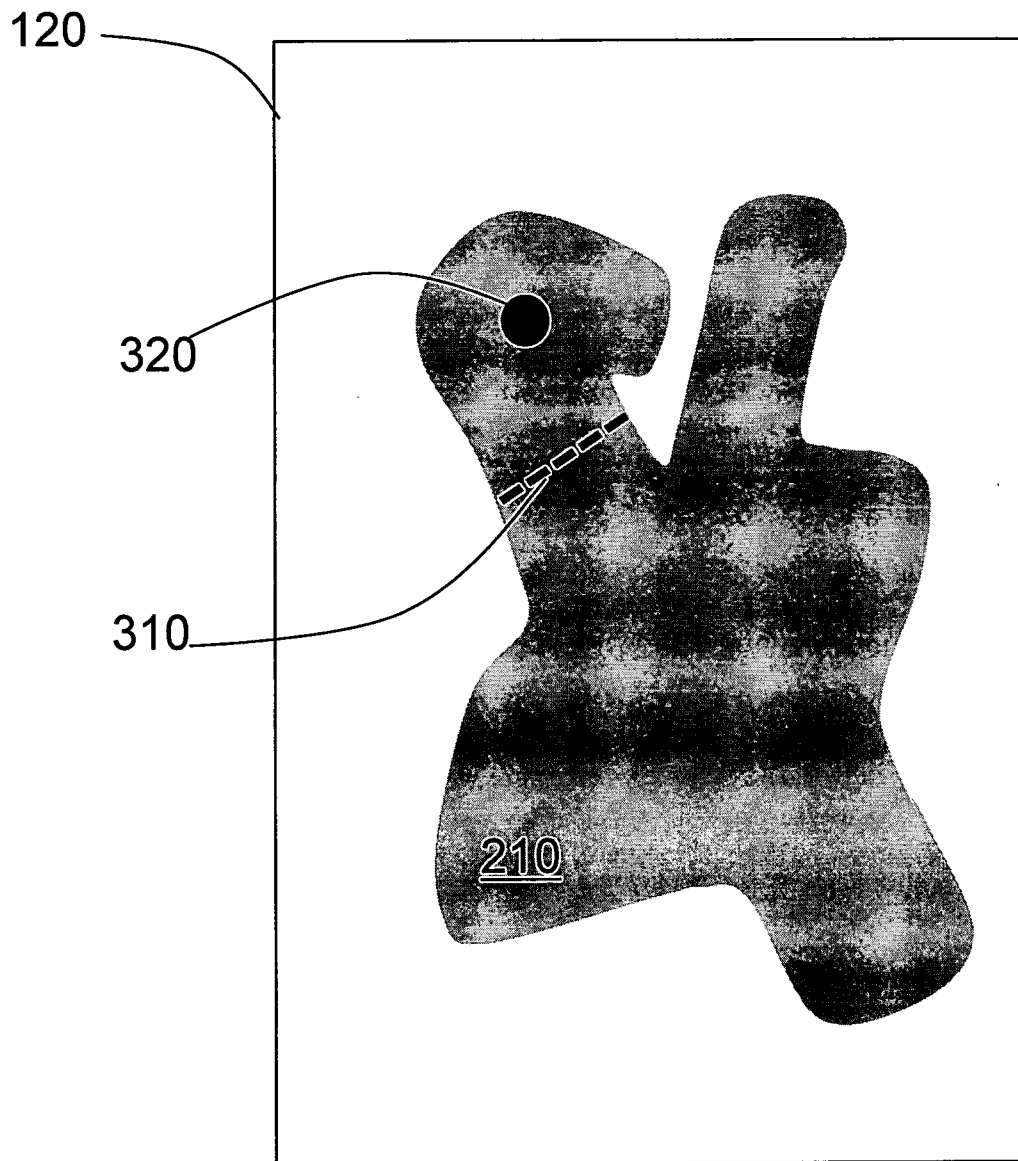


FIG. 4

