INTERNATIONAL SEARCH REPORT

International application No.
PCT/US 09/34084

A. CLASSIFICATION OF SUBJECT MATTER
IPC(8) - A63H 30/04 (2009.01)
USPC - 446/456
According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
USPC-446/456

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
USPC: 446/454, 456 (keyword limited - see terms below)
IPC (8): A63H 30/04 (2009.01) (keyword limited - see terms below)

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
PUBWEST (USPT, PGPB, EPAB, JPAB); GooglePatents, GoogleScholar
Search Terms: control, remote, radio, joystick, hand held, wireless, toy, gaming, RC models, interactive, vehicle, handles, handlebars, housing, tilt, angle, motion sensor

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 5,127,658 A (OPENIANO) 07 July 1992 (07.07.1992), Fig. 4, Fig. 5, Fig. 6, col 2 ln 10-32, col 6 ln 15-26, col 6 ln 61-col 7 ln 62, col 8 ln 14-30	1-18
Y	US 2006/0178085 A1 (SOTEREANOS et al.) 10 August 2006 (10.08.2006), para [0004], [0036]	1-18
Y	US 6,251,015 B1 (CAPRAI) 26 June 2001 (26.06.2001), Abstract, Fig. 1, col 1 ln 64-col 2-17	3, 7-9
Y	US 4,932,913 A (RAVIV et al.) 12 June 1990 (12.06.1990), Abstract, Fig. 8, col 6 ln 65- col 7 ln 15	10
Y	US 5,375,847 A (FROMM et al.) 27 December 1994 (27.12.1994), Abstract, Fig. 1, Fig. 9	17, 18

☐ Further documents are listed in the continuation of Box C. ☐

* Special categories of cited documents:
"A" document defining the general state of the art which is not considered to be of particular relevance
"E" earlier application or patent but published on or after the international filing date
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
"O" document referring to an oral disclosure, use, exhibition or other means
"P" document published prior to the international filing date but later than the priority date claimed
"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
30 March 2009 (30.03.2009)	08 APR 2009

Name and mailing address of the ISA/US	Authorized officer:
Mail Stop PCT, Attn: ISA/US, Commissioner for Patents P.O. Box 1450, Alexandria, Virginia 22313-1450 Facsimile No. 571-273-3201	Lee W. Young PCT Helpdesk: 571-272-4300 PCT OSP: 571-272-7774

Form PCT/ISA/210 (second sheet) (April 2007)

PATENT COOPERATION TREATY

From the INTERNATIONAL BUREAU

PCT

To:

JAMIESON, John
Panitch Schwarze Belisario & Nadel LLP
One Commerce Square
2005 Market Street, Suite 2200
Philadelphia, PA 19103
ETATS-UNIS D'AMERIQUE

NOTIFICATION CONCERNING SUBMISSION OR TRANSMITTAL OF PRIORITY DOCUMENT

(PCT Administrative Instructions, Section 411)

Date of mailing *(day/month/year)* 27 May 2009 (27.05.2009)	
Applicant's or agent's file reference 4110-834WO	**IMPORTANT NOTIFICATION**
International application No. PCT/US2009/034084	International filing date *(day/month/year)* 13 February 2009 (13.02.2009)
International publication date *(day/month/year)* **Not yet published**	Priority date *(day/month/year)* 15 February 2008 (15.02.2008)
Applicant MATTEL, INC. et al	

1. By means of this Form, which replaces any previously issued notification concerning submission or transmittal of priority documents, the applicant is hereby notified of the date of receipt by the International Bureau of the priority document(s) relating to all earlier application(s) whose priority is claimed. Unless otherwise indicated by the letters "NR", in the right-hand column or by an asterisk appearing next to a date of receipt, the priority document concerned was submitted or transmitted to the International Bureau in compliance with Rule 17.1(a) or (b).

2. *(If applicable)* The **letters "NR"** appearing in the right-hand column denote **a priority document which, on the date of mailing of this Form, had not yet been received by the International Bureau** under Rule 17.1(a) or (b). Where, under Rule 17.1(a), the priority document must be submitted by the applicant to the receiving Office or the International Bureau, but the applicant fails to submit the priority document within the applicable time limit under that Rule, **the attention of the applicant is directed** to Rule 17.1(c) which provides that no designated Office may disregard the priority claim concerned before giving the applicant an opportunity, upon entry into the national phase, to furnish the priority document within a time limit which is reasonable under the circumstances.

3. *(If applicable)***An asterisk (*)** appearing next to a date of receipt, in the right-hand column, denotes **a priority document submitted or transmitted to the International Bureau but not in compliance with Rule 17.1(a) or (b)** (the priority document was received after the time limit prescribed in Rule 17.1(a) or the request to prepare and transmit the priority document was submitted to the receiving Office after the applicable time limit under Rule 17.1(b)). Even though the priority document was not furnished in compliance with Rule 17.1(a) or (b), the International Bureau will nevertheless transmit a copy of the document to the designated Offices, for their consideration. In case such a copy is not accepted by the designated Office as the priority document, Rule 17.1(c) provides that no designated Office may disregard the priority claim concerned before giving the applicant an opportunity, upon entry into the national phase, to furnish the priority document within a time limit which is reasonable under the circumstances.

Priority date	Priority application No.	Country or regional Office or PCT receiving Office	Date of receipt of priority document
15 February 2008 (15.02.2008)	61/029,135	US	22 February 2009 (22.02.2009)
13 August 2008 (13.08.2008)	61/088,366	US	22 February 2009 (22.02.2009)
12 February 2009 (12.02.2009)	61/196,710	US	20 May 2009 (20.05.2009)

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Authorized officer
Nora Lindner
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Telephone No. +41 22 338 74 11

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference 4110-834WO	**FOR FURTHER ACTION**	see Form PCT/ISA/220 as well as, where applicable, item 5 below.
International application No. PCT/US 09/34084	International filing date *(day/month/year)* 13 February 2009 (13.02.2009)	(Earliest) Priority Date *(day/month/year)* 15 February 2008 (15.02.2008)
Applicant MATTEL, INC.		

This international search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of 3 sheets.

☐ It is also accompanied by a copy of each prior art document cited in this report.

1. **Basis of the report**
   a. With regard to the **language**, the international search was carried out on the basis of:
      ☒ the international application in the language in which it was filed.
      ☐ a translation of the international application into _____ which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b)).
   b. ☐ This international search report has been established taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rule 43.6*bis*(a)).
   c. ☐ With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, see Box No. I.

2. ☐ **Certain claims were found unsearchable** (see Box No. II).

3. ☐ **Unity of invention is lacking** (see Box No. III).

4. With regard to the **title**,
   ☒ the text is approved as submitted by the applicant.
   ☐ the text has been established by this Authority to read as follows:

5. With regard to the **abstract**,
   ☐ the text is approved as submitted by the applicant.
   ☒ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. With regard to the **drawings**,
   a. the figure of the **drawings** to be published with the abstract is Figure No. 1
      ☒ as suggested by the applicant.
      ☐ as selected by this Authority, because the applicant failed to suggest a figure.
      ☐ as selected by this Authority, because this figure better characterizes the invention.
   b. ☐ none of the figures is to be published with the abstract.

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US 09/34084

Box No. IV Text of the abstract (Continuation of item 5 of the first sheet)

A hand carried remote control unit including a housing portion and at least a first handle extending outwardly and away from the main housing portion. A central vertical plane through front, rear, top and bottom sides of the housing divides the housing into two substantially equal halves. Circuitry in the housing includes a wireless signal transmitter, a controller and at least a tilt sensor connected in a subcircuit with the controller. The tilt sensor includes a ball tube with a central axis and a ball to roll along the tube between opposing ends of the ball tube to make or break the subcircuit. The central axis is pitched downwardly to a horizontal plane perpendicular to the central vertical plane and tangent to the bottom side of the main housing portion to provide a dead zone for the tilt sensor.

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US 09/34084

A. CLASSIFICATION OF SUBJECT MATTER
IPC(8) - A63H 30/04 (2009.01)
USPC - 446/456
According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
USPC-446/456

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
USPC: 446/454, 456 (keyword limited - see terms below)
IPC (8): A63H 30/04 (2009.01) (keyword limited - see terms below)

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PUBWEST (USPT, PGPB, EPAB, JPAB); GooglePatents, GoogleScholar
Search Terms: control, remote, radio, joystick, hand held, wireless, toy, gaming, RC models, interactive, vehicle, handles, handlebars, housing, tilt, angle, motion sensor

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 5,127,658 A (OPENIANO) 07 July 1992 (07.07.1992), Fig. 4, Fig. 5, Fig. 6, col 2 ln 10-32, col 6 ln 15-26, col 6 ln 61-col 7 ln 62, col 8 ln 14-30	1-18
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Y	US 4,932,913 A (RAVIV et al.) 12 June 1990 (12.06.1990), Abstract, Fig. 8, col 6 ln 65- col 7 ln 15	10
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"E" earlier application or patent but published on or after the international filing date
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
"O" document referring to an oral disclosure, use, exhibition or other means
"P" document published prior to the international filing date but later than the priority date claimed
"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"&" document member of the same patent family

Date of the actual completion of the international search
30 March 2009 (30.03.2009)

Date of mailing of the international search report
08 APR 2009

Name and mailing address of the ISA/US
Mail Stop PCT, Attn: ISA/US, Commissioner for Patents
P.O. Box 1450, Alexandria, Virginia 22313-1450
Facsimile No. 571-273-3201

Authorized officer:
Lee W. Young
PCT Helpdesk: 571-272-4300
PCT OSP: 571-272-7774

Form PCT/ISA/210 (second sheet) (April 2007)

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

To:
JOHN JAMIESON
PANITCH SCHWARZE BELISARIO & NADEL LLP
ONE COMMERCE SQUARE
2005 MARKET STREET, SUITE 2200
PHILADELPHIA, PA 19103

PCT

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43*bis*.1)

Date of mailing *(day/month/year)*	08 APR 2009
Applicant's or agent's file reference 4110-834WO	FOR FURTHER ACTION See paragraph 2 below

International application No.	International filing date *(day/month/year)*	Priority date *(day/month/year)*
PCT/US 09/34084	13 February 2009 (13.02.2009)	15 February 2008 (15.02.2008)

International Patent Classification (IPC) or both national classification and IPC
IPC(8) - A63H 30/04 (2009.01)
USPC - 446/456

Applicant MATTEL, INC.

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43*bis*.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

2. **FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1*bis*(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/US	Date of completion of this opinion	Authorized officer:
Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450, Alexandria, Virginia 22313-1450 Facsimile No. 571-273-3201	30 March 2009 (30.03.2009)	Lee W. Young PCT Helpdesk: 571-272-4300 PCT OSP: 571-272-7774

Form PCT/ISA/237 (cover sheet) (April 2007)

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/US 09/34084

Box No. I Basis of this opinion

1. With regard to the **language**, this opinion has been established on the basis of:

   ☒ the international application in the language in which it was filed.

   ☐ a translation of the international application into _____ which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b)).

2. ☐ This opinion has been established taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rule 43*bis*.1(a))

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, this opinion has been established on the basis of:

   a. type of material

      ☐ a sequence listing

      ☐ table(s) related to the sequence listing

   b. format of material

      ☐ on paper

      ☐ in electronic form

   c. time of filing/furnishing

      ☐ contained in the international application as filed

      ☐ filed together with the international application in electronic form

      ☐ furnished subsequently to this Authority for the purposes of search

4. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table(s) relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

5. Additional comments:

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/US 09/34084

Box No. V **Reasoned statement under Rule 43*bis*.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

1. Statement

Novelty (N)	Claims	1 - 18	YES
	Claims	None.	NO
Inventive step (IS)	Claims	None	YES
	Claims	1 - 18	NO
Industrial applicability (IA)	Claims	1 - 18	YES
	Claims	None.	NO

2. Citations and explanations:

Claims 1, 2, 4-6 and 11-16 lack an inventive step under PCT Article 33(3) as being obvious over US 5,127,658 A (Openiano), in view of US 2006/0178085 A1 to Sotereanos et al. (hereinafter 'Sotereanos').

As per claim 1, Openiano discloses a remote control unit configured to be hand carried and to remotely control a mechanized toy with wireless signal receiver, the remote control unit comprising: a housing externally configured as an other mechanical toy so as to support user play activity without the mechanized toy (Fig. 5-remote control assembly 21, col 6 ln 15-26), the housing further including a main housing portion and at least a first elongated handle extending longitudinally outwardly and away from the main housing portion (Fig. 6-remote control assembly 21, Fig. 4-handlebar 22 col 6 ln 15-26), the other toy and the housing having a front side to face away from a user holding the remote control unit by all elongated handles provided on the main housing portion (Fig. 6-near 214 left side perpendicular to bottom line of Fig. 6, Fig. 4-handlebars 22), a rear side to face away from the front side and towards the user holding the handles (Fig. 6 -near 214 right side perpendicular to bottom line of Fig. 6, Fig. 4-handlebars 22), a bottom side between the front and rear sides to face downward and a top side between the front and rear sides to face upward and away from the bottom side (Fig. 6-line at 211 is top and bottom line parallel to 211 is bottom), a central vertical plane extended though the front, rear, top and bottom sides dividing the unit and the housing into two substantially equal halves (Fig. 4); circuitry in the housing including a wireless signal transmitter and a controller operably connected to the wireless signal transmitter and configured to generate and transmit control signals to the mechanized toy in response to inputs from a user holding and operating the remote control unit Fig. 4-remote controller 25, col 6 ln 45-60); at least a first tilt sensor located in the housing connected in a subcircuit with the controller (Fig. 4-Reed Switches 214, col 2 ln 10-32, col 6 ln 61-col 7 ln 31). Openiano does not explicitly disclose the tilt sensor including an elongated ball tube with a central longitudinal axis and a ball having a diameter less than an inner diameter of the ball tube to permit the ball to roll along the tube between opposing ends of the ball tube so as to make or break the subcircuit, the central longitudinal axis of each ball tube being pitched at an acute angle having a magnitude of at least twenty degrees with respect to a horizontal plane perpendicular to the central vertical plane and tangent to the bottom side of the main housing portion to provide a dead zone of the tilt sensor equal to or greater than the magnitude of the acute angle. However, Sotereanos does disclose a radio-controlled vehicles that uses an angle sensor that may comprise a ball-contact type (para [0004], [0036]). It would have been obvious to one of ordinary skill in the art to combine Sotereanos' radio-controlled vehicles that use an angle sensor that may comprise a ball-contact type with Openiano's spatially maneuverable vehicular toy because using a tilt sensor may be preferred over a reed switch or mercury switch to save space and costs, producing the same sensing effect and are designed to be used in an apparatus as disclosed in Openiano.

As per claim 2, Openiano in view of Sotereanos discloses the toy play set of claim 1 wherein the remote control unit further comprises a second elongated handle extending longitudinally outwardly and away from the main housing portion of the housing and the first handle (Fig. 4-handlebar 22 leftside, rightside, col 6 ln 15-26).

As per claim 4, Openiano in view of Sotereanos discloses the toy play set of claim 2 wherein the central vertical plane of the remote control unit separates the first and second elongated handles from one another (Fig. 4-bisect remote control assembly 21).

As per claim 5, Openiano in view of Sotereanos discloses the toy play set of claim 2 wherein the horizontal plane of the remote control unit is tangent to a bottom side of the main housing portion of the housing, the bottom side of the main housing portion of the housing providing a base to stably support the remote control unit when not being held (Fig. 4-bottom side of remote control assembly 21).

As per claim 6, Openiano in view of Sotereanos discloses the toy play set of claim 2 wherein the remote control unit further comprises a switch in the housing in a subcircuit with the controller and a manual actuator exposed on the handle of the handlebar (Fig. 4, Fig. 7-index-finger-operated trigger switch 24, col 7 ln 32-62). Neither Openiano or Sotereanos teach that the manual actuator being located on the back side of the housing in operable connection with the switch. However, a manual actuator being located on the back side of the housing in operable connection with the switch could have been determined via routine experimentation. It would have been obvious to one of ordinary skill in the art to move the location of the actuator in close proximity to the housing based on system requirements.

–Please See Supplemental pages.–

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/US 09/34084

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.
Continuation of:

Box V. 2. Citations and explanations:

As per claim 11, Sotereanos in view of Openiano discloses a radio-controlled vehicles that uses an angle sensor that may comprise a ball-contact type (para [0004], [0036]) and Openiano in view of Sotereanos discloses using identical multiple sensors to detect tilt (Fig. 4-Reed Switches 214, col 2 ln 10-32, col 6 ln 61-col 7 ln 31). Neither Openiano or Sotereanos teach the central longitudinal axis of the ball tube of each of the first and second tilt sensors being oriented to project across the central vertical plane and each of the central longitudinal axes being pitched in opposite directions to one another at an equal acute angle of at least twenty degrees with respect to the horizontal plane perpendicular to the central vertical plane. However, the two sensors with the proper alignment could have been determined via routine experimentation. It would have been obvious to one of ordinary skill in the art to configure the sensors according to the central longitudinal axis of the ball tube of each of the first and second tilt sensors being oriented to project across the central vertical plane and each of the central longitudinal axes being pitched in opposite directions to one another at an equal acute angle of at least twenty degrees with respect to the horizontal plane perpendicular to the central vertical plane because the movement of the handles of game controller would require this orientation for the sensor to receive input correctly.

As per claim 12, Openiano in view of Sotereanos discloses the toy play set of claim 11 wherein the mechanized toy is a toy vehicle and wherein the first and second tilt sensors are dedicated to remotely control steering of the toy vehicle (col 6 ln 61-col 7 ln 31).

As per claim 13, Sotereanos in view of Openiano discloses a radio-controlled vehicles that uses an angle sensor that may comprise a ball-contact type (para [0004], [0036]). Neither Openiano or Sotereanos teach the central longitudinal axis of the ball tube of the first tilt sensor extends toward the front and rear sides of the housing. However, a sensor with the proper alignment could have been determined via routine experimentation. It would have been obvious to one of ordinary skill in the art to orient the central longitudinal axis of the tilt sensor toward the front and rear sides of the housing because the movement of the handlebars of game controller would require this orientation for the sensor to receive input correctly.

As per claim 14, Openiano in view of Sotereanos discloses the toy play set of claim 13 wherein the mechanized toy is a toy vehicle and wherein the first tilt sensor is dedicated to remotely control a function of the toy vehicle other than steering (Fig. 4-thumb-operated push-button switches 23, col 8 ln 14-30).

As per claim 15, Sotereanos in view of Openiano discloses a radio-controlled vehicles that uses an angle sensor that may comprise a ball-contact type (para [0004], [0036]). Neither Openiano or Sotereanos teach the first tilt sensor includes at one end of the ball tube on opposite sides of the ball tube a light source and a light responsive element aimed at the light source. However, the use of a sensor with a ball tube, a light source and a light responsive element aimed at the light source could have been determined via routine experimentation. It would have been obvious to one of ordinary skill in the art to use a light source and a light responsive element in a ball tube tilt sensor because this type of sensor is commonly configured this way and would activate the controller by either an open or closed circuit condition when the ball moves out of the light that it was blocking.

As per claim 16, Sotereanos in view of Openiano discloses a radio-controlled vehicles that uses an angle sensor that may comprise a ball-contact type (para [0004], [0036]). Neither Openiano or Sotereanos teach the first tilt sensor includes at one end of the ball tube first and second electrically conductive members spaced apart from one another in the subcircuit with the controller and wherein the ball is electrically conductive so as to make the subcircuit in contact with the first and second electrically conductive members. However, the use of a sensor with one end of the ball tube with electrically conductive members could have been determined via routine experimentation. It would have been obvious to one of ordinary skill in the art to use electrically conductive members spaced apart from one another in the subcircuit because this type of sensor is commonly configured this way and would activate the controller by either an open or closed circuit condition when the ball moves along the tube.

Claims 3 and 7-9 lack an inventive step under PCT Article 33(3) as being obvious over Openiano in view of Sotereanos as applied above, and further in view of US 6,251,015 B1 (Caprai).

As per claim 3, the combination of Openiano and Sotereanos discloses a radio controlled toy vehicle that uses handlebars (Openiano-Fig. 4-handlebar 22 leftside, rightside, col 6 ln 15-26). Neither Openiano or Sotereanos teach the toy play set where the first and second handles are configured with respect to the main housing portion of the housing so as to orient generally downwardly, palms of a user holding the first and second handles with two hands. However, Caprai does disclose a game unit controller with handlebars which the user orients their palms in a downwardly direction (Abstract, Fig. 1). It would have been obvious to one of ordinary skill in the art to add Caprai's handlebars which the user orients their hands downward to the combination of Openiano and Sotereanos because orienting the hands downward would provide the best control of the handlebars and is a common configuration in real motorcycle handlebar operation.

As per claim 7, the combination of Openiano and Sotereanos discloses a radio controlled toy vehicle that uses handlebars (Openiano-Fig. 4-handlebar 22 leftside, rightside, col 6 ln 15-26). Neither Openiano or Sotereanos teach where the remote control unit further comprises a first hand lever mounted to the front side of the main housing portion of the housing extending outwardly away from the main housing portion proximal to yet spaced from and generally in line with the first handle so as to be graspable by a user together with the first handle. However, Caprai does disclose a game unit controller with handlebars that incorporates the use of hand levers (Abstract, Fig. 1). It would have been obvious to one of ordinary skill in the art to add Caprai's handlebars with hand levers to the combination of Openiano and Sotereanos because hand levers provide critical functions such as braking and shifting and is a common configuration in real motorcycle handlebar operation.

--Please See Continuation Sheet--

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/US 09/34084

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.
Continuation of:

Box V. 2. Citations and explanations:

As per claim 8, Openiano in view of Sotereanos discloses the toy play set of claim 7 wherein the remote control unit further comprises a switch in the housing in a subcircuit with the controller and a manual actuator exposed on the handle of the handlebar (Fig. 4, Fig. 7-index-finger-operated trigger switch 24, col 7 ln 32-62). Neither Openiano or Sotereanos teach the location of the actuator in close proximity to the housing. However, the location of the actuator in close proximity to the housing could have been determined via routine experimentation. It would have been obvious to one of ordinary skill in the art to move the location of the actuator in close proximity to the housing based on system requirements.

As per claim 9, the combination of Openiano and Sotereanos discloses the toy play set of claim 2 wherein the remote control unit further comprises a switch in the housing in a subcircuit with the controller and a manual actuator exposed on the handle of the handlebar (Fig. 4, Fig. 7-index-finger-operated trigger switch 24, col 7 ln 32-62). Neither Openiano or Sotereanos teach where the first handle is mounted to the main housing portion for pivotal movement about the central longitudinal axis of the first handle and the remote control unit further comprises at least a switch in a subcircuit with the controller and positioned for actuation by pivotal movement of the first handle. However, Caprai does disclose game unit controller adapted for transmitting an acceleration control signal to the game unit upon rotation of the throttle hand grip (col 1 ln 64-col 2-17). It would have been obvious to one of ordinary skill in the art to add Caprai's handlebars with a throttle hand grip to the combination of Openiano and Sotereanos because a rotatable throttle hand grip provides critical functions such as acceleration and is a common configuration in real motorcycle handlebar operation.

Claim 10 lacks an inventive step under PCT Article 33(3) as being obvious over Openiano in view of Sotereanos as applied above, and further in view of US 4,932,913 A to Raviv et al. (hereinafter 'Raviv').

As per claim 10, Openiano in view of Sotereanos discloses the toy play set of claim 2 wherein the first and second handles and the main housing portion of the housing are configured to resemble a pair of handlebars of a motorcycle and wherein the mechanized toy is a toy motorcycle (Fig. 4-handlebar 22 col 6 ln 15-26, col 1 ln 12-20-plurality of remotely-controlled vehicular toys). Neither Openiano or Sotereanos teach the motorcycle handlebar having an instrument cluster. However, Raviv does disclose a hand held control device for use by a child to simulate directional and speed control of a vehicle having motorcycle handlebars with an instrument cluster (Abstract, Fig. 8, col 6 ln 65- col 7 ln 15). It would have been obvious to one of ordinary skill in the art to add Raviv's motorcycle handlebars with an instrument cluster to the combination of Openiano and Sotereanos because motorcycle handlebars with an instrument cluster provides functions such as moitoring speed, RPM gauge or other simulated outputs and is a common configuration in real motorcycle handlebar operation.

Claims 17 and 18 lack an inventive step under PCT Article 33(3) as being obvious over Openiano in view of Sotereanos as applied above, and further in view of US 5,375,847 A to Fromm et al. (hereinafter 'Fromm').

As per claim 17, the combination of Openiano and Sotereanos discloses a radio controlled toy vehicle that uses handlebars (Openiano-Fig. 4-handlebar 22 leftside, rightside, col 6 ln 15-26). Neither Openiano or Sotereanos teach the central vertical plane of the remote control unit bisects the first handle and the main housing portion of the housing. However, Fromm does disclose a toy ray gun with a handle where the central vertical plane bisects the handle and the main housing portion of the housing (Abstract, Fig. 1-handle 18). It would have been obvious to one of ordinary skill in the art to add Fromm's ray gun shaped toy with a handle in which central vertical plane bisects the handle and the main housing portion of the housing to the combination of Openiano and Sotereanos because a handle arranged in this manner would provide another optional use for the remote controlled unit in a pointing fashion instead of a steering mechanism.

As per claim 18, the combination of Openiano and Sotereanos discloses a radio controlled toy vehicle that uses handlebars (Openiano-Fig. 4-handlebar 22 leftside, rightside, col 6 ln 15-26). Neither Openiano or Sotereanos teach the toy play set of claim 17 wherein the housing of the remote control unit is configured to resemble a ray gun and the mechanized toy is configured as a space ship. However, Fromm does disclose a toy configured to resemble a ray gun that emits light to a target figurine structure (Abstract, Fig. 1, Fig. 9-figurine receiving structure). It would have been obvious to one of ordinary skill in the art to add Fromm's ray gun shaped toy that emits light to a target figurine structure to the combination of Openiano and Sotereanos because using a toy ray gun that remotely controls a mechanized toy that is configured as a space ship would provide an alternative means to operate the remote control device thereby increasing the range of uses of the controller.

Claims 1 - 18 have industrial applicability as defined by PCT Article 33(4) because the subject matter can be made or used in industry.