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(54) Title: SHAKEN BABY SYNDROME EDUCATIONAL DOLL
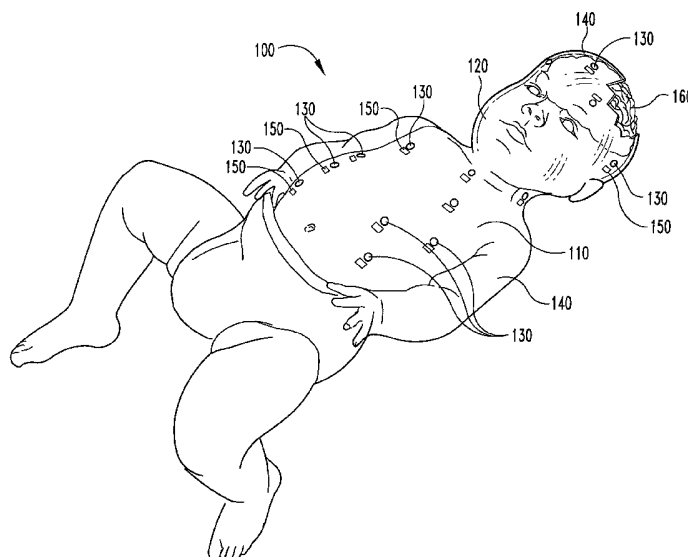
(57) Abstract: A doll (100) for educating caregivers about Shaken Baby Syndrome comprises a head portion (120), a body (110), and may comprise transparent skin (140). The head portion (120) may have a simulated brain (160) disposed therein. The head portion (120) is floppably connected to the body (110). The doll (100) may further comprise a first chamber and a second chamber containing simulated blood, the simulated blood being visible in the first chamber after acceleration experienced during a shaking episode, but otherwise being concealed from view in the second chamber. A plurality of acceleration sensors (210) may be disposed within the doll (100) to detect acceleration experienced during a shaking episode, and the plurality of acceleration sensors (210) may trigger warnings to the caregiver when portions of the doll (100) experience acceleration sufficient to endanger an infant.

SHAKEN BABY SYNDROME EDUCATIONAL DOLL

This application claims priority to, and incorporates herein by reference,
United States Provisional Patent Application Serial Number 60/316,043, filed

5   August 30, 2001.

BACKGROUND

Shaken Baby Syndrome, or Shaken Infant Syndrome, occurs when
caregivers shake an infant forcefully. Shaken Baby Syndrome can cause a wide

10   range of serious health problems, including broken bones, blindness, spinal injury,
brain damage, and death. When the infant is shaken, it can cause internal bleeding
inside the brain that can go undetected. It is therefore important to take an infant
who has been shaken to a hospital or doctor in order to prevent severe permanent
injury.

15   The problem of Shaken Baby Syndrome is beginning to draw more
attention. Doctors and other healthcare professionals are beginning to study more
thoroughly the causes and effects of Shaken Baby Syndrome. In September of
2001, an international conference was held in Sydney, Australia to help healthcare
professionals to disseminate and to learn information about Shaken Baby

20   Syndrome.

Shaken Baby Syndrome often occurs when caregivers are left alone with an
infant who is engaging in some behavior that is frustrating to the caregiver. For
example, despite the caregiver's best efforts to determine what is wrong, the infant
will not stop crying. In such situations, caregivers may shake the infant in a

25   misguided attempt to stop the frustrating behavior.

Caregivers can learn to cope with the stress of a crying infant, though. It is
important to educate them about the danger of Shaken Baby Syndrome so that they
may take appropriate measures to prevent or deal with frustration and stress. By
preventing or dealing effectively with frustration and stress, the caregiver can

30   prevent Shaken Baby Syndrome.

Surprisingly mild shaking can cause Shaken Baby Syndrome. The
membrane that secures the brain to the skull does not generally develop until 18

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months of age, and therefore infants younger than this are particularly vulnerable
to Shaken Baby Syndrome. It is also important to educate caregivers of this fact,
both in order to help prevent them from shaking an infant even mildly, and in order
to encourage them to seek medical care immediately for the infant in the event of

5   such a shaking, so that any injury is not aggravated by going untreated.

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SUMMARY OF THE INVENTION

The present invention addresses the problems discussed above with an educational doll capable of serving as an instructional tool to show caregivers how shaking can cause internal bleeding and other injuries associated with Shaken Baby

5 Syndrome, and in particular to show them that relatively mild shakings can potentially cause serious, permanent injury.

Provided is a doll and method of use, comprising in one embodiment a head portion floppably connected to a body, and an acceleration sensor connected with the doll that may trigger a warning when the doll is shaken. More than one

10 acceleration sensor may be connected with, for example, the head portion and/or the body of the doll. The warnings may comprise any means that warns a user, including visual, audio, and tactile elements, such as, for example, light, sound, and vibration. Alternatively or in conjunction with other warnings, a warning may comprise text, such as, for example, text that indicates an injury caused when the

15 doll is shaken.

The head portion of the doll may encompass a simulated brain. In one embodiment at least part of the head portion is at least partially transparent and reveals at least a portion of the simulated brain. In the embodiment including a simulated brain the warning may include a visual element, such as, for example,

20 light, emanating from the simulated brain. Light as a visual element may be generated in part by, for instance, one or more Liquid Crystal Displays and/or Light Emitting Diodes, and at least a portion of the light may be transmitted at least partially through one or more fiber optic cables. Such a visual element may emanate from an area of the simulated brain injured when the doll is shaken, and

25 may, for example, include text indicating an injury caused when the doll is shaken. Such text may identify a function of a portion of a human brain in a corresponding position to the area of the simulated brain injured when the doll is shaken, such that a user can identify potential mental impairment that can result when an infant is shaken.

30 In another embodiment that can be used separately or in conjunction with the above embodiments, a doll is provided, comprising first and second chambers

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disposed within the doll. At least a portion of the first chamber is at least partially

transparent and disposed to permit viewing of the contents of the first chamber.

The second chamber contains simulated blood and is in fluid communication with

the first chamber through one or more acceleration-sensitive connections. The one

5   or more acceleration-sensitive connections prevent the simulated blood from

passing from the second chamber to the first chamber absent acceleration

exceeding a pre-selected threshold.

Alternatively or in conjunction with either of the above embodiments, a

label may be provided for the acceleration sensor and/or for the first chamber.

10   Such a label may identify a function of a portion of an infant's anatomy in a

corresponding position to the acceleration sensor and/or first chamber,

respectively, such that a user can identify potential physiological consequences to

an infant when the doll is shaken.

In another embodiment either separate or combined with the above

15   embodiments, a doll is provided comprising a head portion floppably connected to

a body and a plurality of acceleration sensors disposed among the head portion and

the body. Each of the plurality of acceleration sensors may have an output circuit

upon which an output signal is placed when the doll is shaken, and each output

signal may be indicative of the magnitude of acceleration experienced by each

20   acceleration sensor. The doll may also comprise a CPU having the output circuits

from the plurality of acceleration sensors as input. The CPU may be programmed

with a set of injury criteria that correlate accelerations experienced by portions of

human anatomy positioned correspondingly to the plurality of acceleration sensors

with injury thereto. The CPU may be further programmed to output warning

25   signals corresponding to the output signals of the plurality of acceleration sensors.

A plurality of warning devices may be operatively connected to the CPU, the

plurality of warning devices providing warnings corresponding to the warning

signals output by the CPU. Such a doll may further include a simulated brain and

nervous system disposed within the head portion and the body, and a transparent

30   skin through which the simulated brain and the nervous system are visible.

5

The doll of the above embodiment may further comprise first and second chambers disposed within the doll, where at least a portion of the first chamber is at least partially transparent and disposed to permit viewing of the contents of the first chamber. The second chamber may contain simulated blood and be in fluid

5   communication with the first chamber through one or more CPU-controlled valves. The one or more CPU-controlled valves may prevent the simulated blood from passing from the second chamber to the first chamber absent a warning signal output by the CPU to the one or more CPU-controlled valves.

Alternatively or in conjunction with any of the above embodiments, a doll

10   is provided comprising a head portion floppably connected to a body, and simulated blood that visibly appears in an area of the doll that has experienced acceleration sufficient to cause internal bleeding to a corresponding area of an infant's anatomy. The simulated blood may comprise, for example, an electronic display, or a liquid crystal display.

15   A method of learning about Shaken Baby Syndrome is also provided. The method includes shaking a doll, the doll comprising a head portion floppably connected to a body, and an acceleration sensor connected with the doll that may trigger a warning when the doll is shaken. The method may also include causing the acceleration sensor connected with the doll to trigger the warning. Further

20   steps may include evaluating the warning to determine potential physiological effects of corresponding shaking of an infant, and/or performing said steps in furtherance of a legal proceeding.

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BRIEF DESCRIPTION OF THE DRAWINGS

Figure 1 is a perspective view of a doll according to the present invention.

5   Figure 2 is a block diagram of certain elements of a system suitable for controlling the lights and valves of a Shaken Baby educational doll according to the present invention.

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DESCRIPTION OF THIS EMBODIMENT

For the purposes of promoting an understanding of the principles of the invention, reference will now be made to the embodiment illustrated in the drawings and specific language will be used to describe the same. It will

5   nevertheless be understood that no limitation of the scope of the invention is thereby intended, and alterations and modifications in the illustrated device, and further applications of the principles of the invention as illustrated therein, are herein contemplated as would normally occur to one skilled in the art to which the invention relates.

10   Figure 1 shows a Shaken Baby Syndrome educational doll according to the present invention, shown generally at 100. The educational doll 100 according to the present invention comprises a body 110 and head 120 and may be covered with transparent or translucent skin 140. Alternatively, the head 120 may be formed at least partially from a transparent material, such as acrylic, without skin 140. The

15   head 120 is floppably connected to the body 110 by a flexible neck or other joint, so that the head 120 is free to flop around relative to the body 110. In one embodiment the head 120 may only flop forward and backward relative to the body 110. In another embodiment the head 120 may only flop side-to-side relative to the body 110. In other embodiments various combinations of the above

20   movements are contemplated, including movement in all directions. It will be appreciated that this freedom in the floppable connection preferably simulates the anatomy of real infants, which are unable to support their own heads against even a single gravity of acceleration, much less the multiple gravities experienced during a shaking episode.

25   In one embodiment, the head 120 of the doll 100 contains a simulated brain 160 that is visible through the transparent skin 140 of the doll 100. The brain 160 may be rubber and may be formed as part of the body 110. One embodiment of the doll further comprises a simulated spinal cord and simulated nerves extending from the spine and brain 160 to the limbs of the doll 100. The simulated nerves

30   and spinal cord may also be visible through the transparent skin 140 of the doll 100. In this embodiment, the body 110 also contains simulated blood that can

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simulate internal bleeding. The simulated blood is preferably liquid and preferably red, but it will be appreciated that any substance and color suitable to simulate internal bleeding may be used, including by way of example and not of limitation, gel, powder, liquid crystal displays, etc.

5   The head 120 of this embodiment doll also contains a number of lights 130 positioned in different locations throughout the head 120, with associated labels 150 describing the portion of the brain and/or the function of the brain at that location. Light Emitting Diodes ("LEDs") can advantageously be used for these lights 130, as they are durable and require little power. Fiber optic means, such as
10   cables, may be used to transmit light. In conjunction with the lights 130, the labels 150 permit identification of the brain subsections and/or brain functions that are typically performed in the brain subsection found at the corresponding location, such as, for example, speech or memory.

     When the doll 100 is shaken, the floppable connection between the body
15   110 and the head 120 permits the head 120 to experience acceleration similar to the acceleration that an infant's head would actually experience during shaking. The shaking action causes lights 130 to illuminate in the head 120 corresponding to the locations experiencing force sufficient to potentially cause internal bleeding and/or brain damage. In this way, a caregiver can shake the doll 100 and then observe
20   which part or parts of an infant's brain could have been damaged by the shaking, as well as the lasting harm to brain function that such a shaking would most likely cause if left untreated.

     According to one embodiment, a method is provided for learning about Shaken Baby Syndrome. Such a method may involve the use of a doll 100, where
25   the doll 100 comprises a head 120 floppably connected to a body 110, and an acceleration sensor (not shown) connected with the doll 100. The acceleration sensor triggers a warning or other indicia when the doll 100 is shaken. One method of using such a doll 100 to learn about Shaken Baby Syndrome comprises shaking the doll 100 sufficiently to cause the acceleration sensor connected with
30   the doll 100 to trigger a warning. Such a method may further comprise evaluating the warning to determine potential physiological effects of corresponding shaking

of an infant. In one embodiment, the above method(s) is/are applied in furtherance of a legal proceeding, for instance to provide evidence of damage that may or may not occur for a given shaking. Those of skill will recognize that a legal proceeding for which information of the type provided by the doll 100 could be useful includes

5   by way of example and not of limitation a criminal and a non-criminal investigation, a social work investigation, a statistical analysis, an indictment, a trial, and hospital recordkeeping, among other proceedings.

      In one embodiment, the shaking action also releases the simulated blood to simulate internal bleeding and other injuries caused by the shaking action. The

10   simulated blood is preferably stored in a blood system comprising a first compartment and a second compartment. There can be any number of first compartments and second compartments, including one. Simulated blood in a first compartment is visible through the transparent skin 140 of the doll, whereas when said simulated blood is contained within a second compartment, said simulated

15   blood is concealed from view. Opening valves or otherwise permitting the simulated blood to flow from the second compartment into the first compartment can simulate internal bleeding. Simulated blood in the second compartment may be concealed either by making the second compartment opaque or by disposing it within an interior portion of the doll that is not visible through the transparent skin

20   140.

      In an alternative embodiment, the shaking action activates at least one liquid crystal display (LCD) visible through the transparent skin 140 to simulate internal bleeding and other injuries caused by the shaking action. In yet another preferred embodiment, the doll 100 comprises opaque skin 240 with LEDs or other

25   appropriate output devices extending therethrough.

      It will be appreciated by the skilled artisan that any suitable visual, audio, or tactile indicia or warning may be used to warn a user when the doll has experienced acceleration above a pre-selected threshold (the terms warning and indicia are used interchangeably). Therefore, further alternate embodiments

30   employ one or more indicia or warnings selected from the foregoing group of indicia, and the term light 130 should be understood to refer to and include one or

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more indicia selected from this group of indicia. The responses of the doll to

shaking can be controlled in a number of ways. In certain embodiments, the doll

includes a number of acceleration sensors controlled by a Central Processing Unit

("CPU") to monitor the positive accelerations and negative accelerations (i.e.,

5   decelerations) experienced by various locations within the doll. Figure 2 is a block

diagram of a system suitable for use in such embodiments, which system is shown

generally at 200.

In response to signals from the acceleration sensor(s) 210, the CPU 220 can

issue commands to indicator(s) 250 to, for example, light the corresponding light

10   130 when a location within the head 120 experiences acceleration sufficient to

cause brain damage or internal bleeding in the brain 160. Likewise, the CPU 220

can issue commands to indicator(s) 250 to, for example, light the corresponding

light 130 when a location within the body 110 experiences acceleration sufficient

to cause internal organ damage. The CPU 220 can issue commands to open

15   valve(s) 240 to permit the simulated blood to enter at least one visible

compartment from at least one concealed compartment when an acceleration

sensor 210 in a location indicates that said location has experienced acceleration

sufficient to cause internal bleeding at said location.

Although one embodiment employs accelerometers having identical

20   outputs per unit of acceleration, those of skill in the art will note that the

acceleration necessary to cause injury may actually vary from location to location

throughout the body 110. Therefore, different acceleration sensor(s) 210, or

acceleration sensor(s) 210 having a variable output that can be interpreted by the

CPU 220, may be used in order to vary the doll's response to acceleration at each

25   of the monitored locations.

Alternatively, a passive monitoring system can be used to activate the

visual, audio, and/or tactile warnings and to cause the simulated internal bleeding.

In such a system, for example, valve(s) 240 separating concealed and visible

simulated blood compartments may be mechanically controlled. Or, instead of

30   valve(s) 240, membranes that are permeable above certain accelerations or that can

be deformed by sufficient acceleration could separate the two types of

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compartments. Similarly, the lights 130 in the doll's head 120 may each have an associated acceleration sensor 210 that is triggered by a certain acceleration. Once triggered, the light 130 continues to shine until the associated acceleration sensor 210 is manually reset.

5   Examples of acceleration sensing means suitable for incorporation into a doll according to the present invention include accelerometers, piezoelectric crystals, any type of acceleration-sensing transducer, and the like. Some examples are included, for example, in U.S. Patent No. 5,924,674 to Hahn et al., and in U.S. Patent No. 6,055,858 to Muenzel et al., which references are hereby incorporated 10   herein in their entireties. Further, the specifications of U.S. Patent No. 3,027,655 to Alderson regarding CPR mannequins, and U.S. Patent Nos. 6,048,209 to Bailey and 5,443,388 to Jurmain et al. regarding educational dolls for caregivers of infants are also hereby incorporated herein in their entireties.

While the invention has been illustrated and described in detail in the 15   drawings and foregoing description, the same is to be considered as illustrative and not restrictive in character, it being understood that only this embodiment, and certain other embodiments deemed helpful in further explaining how to make or use this embodiment, have been shown. All changes and modifications that come within the spirit of the invention are desired to be protected.

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I claim:

1.   A doll, comprising:

       a head portion floppably connected to a body; and

       an acceleration sensor connected with the doll and triggering a warning

5   when the doll is shaken.

2.   The doll of claim 1, wherein the acceleration sensor is connected with the

head portion of the doll.

10   3.   The doll of claim 1, wherein the acceleration sensor is connected with the

body of the doll.

4.   The doll of claim 1, wherein the warning comprises elements selected from

the set consisting of:

15   visual;

              audio; and

              tactile.

5.   The doll of claim 1, wherein the warning comprises elements selected from

20   the set consisting of:

              light;

              sound; and

              vibration.

25   6.   The doll of claim 1, wherein the warning comprises text.

7.   The doll of claim 6, wherein the text indicates an injury caused when the

doll is shaken.

30   8.   The doll of claim 1, wherein the head portion encompasses a simulated

brain.

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9.   The doll of claim 8, wherein at least part of the head portion is at least partially transparent and reveals at least a portion of the simulated brain.

5   10.   The doll of claim 9, wherein the warning includes a visual element emanating from the simulated brain.

11.   The doll of claim 10, wherein the visual element emanating from the simulated brain emanates from an area of the simulated brain injured when the doll

10   is shaken.

12.   The doll of claim 11, wherein the visual element emanating from the simulated brain includes text indicating an injury caused when the doll is shaken.

15   13.   The doll of claim 12, wherein the text indicating an injury caused when the doll is shaken identifies a function of a portion of a human brain in a corresponding position to the area of the simulated brain injured when the doll is shaken, such that a user can identify potential mental impairment that can result when an infant is shaken.

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14.   The doll of claim 11, wherein the visual element emanating from the simulated brain comprises light.

15.   The doll of claim 14, wherein the light is generated at least in part by a

25   Liquid Crystal Display.

16.   The doll of claim 14, wherein the light is generated at least in part by a Light Emitting Diode.

30   17.   The doll of claim 14, wherein at least a portion of the light is transmitted at least partially through a fiber optic cable.

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18.   The doll of claim 1, further comprising:

   a label for the acceleration sensor, the label identifying a function of a

portion of an infant's anatomy in a corresponding position to the acceleration

5   sensor, such that a user can identify potential physiological consequences to an

infant when the doll is shaken.

19.   A doll, comprising:

   first and second chambers disposed within the doll, at least a portion of the

10   first chamber being at least partially transparent and disposed to permit viewing of

the contents of the first chamber; and

   the second chamber containing simulated blood and being in fluid

communication with the first chamber through one or more acceleration-sensitive

connections, the one or more acceleration-sensitive connections preventing the

15   simulated blood from passing from the second chamber to the first chamber absent

acceleration exceeding a pre-selected threshold.

20.   The doll of claim 1, further comprising:

   first and second chambers disposed within the doll, at least a portion of the

20   first chamber being at least partially transparent and disposed to permit viewing of

the contents of the first chamber; and

   the second chamber containing simulated blood and being in fluid

communication with the first chamber through one or more acceleration-sensitive

connections, the one or more acceleration-sensitive connections preventing the

25   simulated blood from passing from the second chamber to the first chamber absent

acceleration exceeding a pre-selected threshold.

21.   The doll of claim 19, further comprising a label for the first chamber, the

label identifying a function of a portion of an infant's anatomy in a corresponding

30   position to the first chamber, such that a user can identify potential effects of

internal bleeding that can result to an infant when the doll is shaken.

22.   A doll, comprising:

a head portion floppably connected to a body;

a plurality of acceleration sensors disposed among the head portion and the

5   body, each of the plurality of acceleration sensors having an output circuit upon

which an output signal is placed when the doll is shaken, each output signal being

indicative of the magnitude of acceleration experienced by each acceleration

sensor;

a CPU having the output circuits from the plurality of acceleration sensors

10   as input, the CPU being programmed with a set of injury criteria that correlate

accelerations experienced by portions of human anatomy positioned

correspondingly to the plurality of acceleration sensors with injury thereto, the

CPU being further programmed to output warning signals corresponding to the

output signals of the plurality of acceleration sensors;

15   a plurality of warning devices operatively connected to the CPU, the

plurality of warning devices providing warnings corresponding to the warning

signals output by the CPU.

23.   The doll of claim 22, further comprising a simulated brain and nervous

20   system disposed within the head portion and the body, and a transparent skin

through which the simulated brain and the nervous system are visible.

24.   The doll of claim 22, further comprising:

first and second chambers disposed within the doll, at least a portion of the

25   first chamber being at least partially transparent and disposed to permit viewing of

the contents of the first chamber; and

the second chamber containing simulated blood and being in fluid

communication with the first chamber through one or more CPU-controlled valves,

the one or more CPU-controlled valves preventing the simulated blood from

30   passing from the second chamber to the first chamber absent a warning signal

output by the CPU to the one or more CPU-controlled valves.

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25.   A doll, comprising:

        a head portion floppably connected to a body; and

        simulated blood that visibly appears in an area of the doll that has

experienced acceleration sufficient to cause internal bleeding to a corresponding

area of an infant's anatomy.

26.   The doll of claim 25, wherein the simulated blood comprises an electronic

display.

27.   The doll of claim 25, wherein the simulated blood comprises a liquid

crystal display.

28.   A doll, comprising:

        head means floppably connected to body means; and

        acceleration sensing means connected with the doll and triggering warning

means when the doll is shaken.

29.   A method of learning about Shaken Baby Syndrome, the method

comprising:

        shaking a doll, the doll comprising:

                a head portion floppably connected to a body; and

                an acceleration sensor connected with the doll and triggering a

        warning when the doll is shaken; and

                causing the acceleration sensor connected with the doll to trigger the

warning.

30.   The method of claim 29, further comprising the step of:

        evaluating the warning to determine potential physiological effects of

corresponding shaking of an infant.

31.   Performing the steps of the method of claim 29 in furtherance of a legal proceeding.

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**Received by the International Bureau on 10 February 2003 (10.02.03):
original claims 1-31 replaced by amended claims 1-34 (6 pages)]**

I claim:

1.   A doll, comprising:

        a head portion floppably connected to a body; and

        an acceleration sensor connected with the doll and triggering a warning

indicative of Shaken Baby Syndrome when the doll is subjected to treatment that

could cause Shaken Baby Syndrome in an infant subjected to said treatment.

2.   The doll of claim 1, wherein the acceleration sensor is connected with the

head portion of the doll.

3.   The doll of claim 1, wherein the acceleration sensor is connected with the

body of the doll.

4.   The doll of claim 1, wherein the warning comprises elements selected

from the set consisting of:

        visual;

        audio; and

        tactile.

5.   The doll of claim 1, wherein the warning comprises elements selected

from the set consisting of:

        light;

        sound; and

        vibration.

6.   The doll of claim 1, wherein the warning comprises text.

7.   The doll of claim 6, wherein the text indicates an injury caused when the

doll is subjected to said treatment.

8.   The doll of claim 1, wherein the head portion encompasses a simulated

brain.

AMENDED SHEET (ARTICLE 19)

9.   The doll of claim 8, wherein at least part of the head portion is at least partially transparent and reveals at least a portion of the simulated brain.

10.   The doll of claim 9, wherein the warning includes a visual element emanating from the simulated brain.

11.   The doll of claim 10, wherein the visual element emanating from the simulated brain emanates from an area of the simulated brain injured when the doll is subjected to said treatment.

12.   The doll of claim 11, wherein the visual element emanating from the simulated brain includes text indicating an injury caused when the doll is subjected to said treatment.

13.   The doll of claim 12, wherein the text indicating an injury caused when the doll is subjected to said treatment identifies a function of a portion of a human brain in a corresponding position to the area of the simulated brain injured when the doll is subjected to said treatment, such that a user can identify potential mental impairment that can result when an infant is subjected to said treatment.

14.   The doll of claim 11, wherein the visual element emanating from the simulated brain comprises light.

15.   The doll of claim 14, wherein the light is generated at least in part by a Liquid Crystal Display.

16.   The doll of claim 14, wherein the light is generated at least in part by a Light Emitting Diode.

17.   The doll of claim 14, wherein at least a portion of the light is transmitted at least partially through a fiber optic cable.

AMENDED SHEET (ARTICLE 19)

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18.   The doll of claim 1, further comprising:

a label for the acceleration sensor, the label identifying a function of a

5   portion of an infant's anatomy in a corresponding position to the acceleration

sensor, such that a user can identify potential physiological consequences to an

infant when the doll is subjected to said treatment.

19.   A doll, comprising:

10   first and second chambers disposed within the doll, at least a portion of the

first chamber being at least partially transparent and disposed to permit viewing of

the contents of the first chamber; and

the second chamber containing simulated blood and being in fluid

communication with the first chamber through one or more acceleration-sensitive

15   connections, the one or more acceleration-sensitive connections preventing the

simulated blood from passing from the second chamber to the first chamber absent

acceleration exceeding a pre-selected threshold.

20.   The doll of claim 1, further comprising:

20   first and second chambers disposed within the doll, at least a portion of the

first chamber being at least partially transparent and disposed to permit viewing of

the contents of the first chamber; and

the second chamber containing simulated blood and being in fluid

communication with the first chamber through one or more acceleration-sensitive

25   connections, the one or more acceleration-sensitive connections preventing the

simulated blood from passing from the second chamber to the first chamber absent

acceleration exceeding a pre-selected threshold.

21.   The doll of claim 19, further comprising a label for the first chamber, the

30   label identifying a function of a portion of an infant's anatomy in a corresponding

position to the first chamber, such that a user can identify potential effects of

internal bleeding that can result to an infant when the doll is subjected to treatment

that could cause Shaken Baby Syndrome in an infant subjected to said treatment.

AMENDED SHEET (ARTICLE 19)

22.   A doll, comprising:

a head portion floppably connected to a body;

5   a plurality of acceleration sensors disposed among the head portion and the

body, each of the plurality of acceleration sensors having an output circuit upon

which an output signal is placed when the doll is subjected to treatment that could

cause Shaken Baby Syndrome in an infant subjected to said treatment, each output

signal being indicative of the magnitude of acceleration experienced by each

10   acceleration sensor;

a CPU having the output circuits from the plurality of acceleration sensors

as input, the CPU being programmed with a set of injury criteria that correlate

accelerations experienced by portions of human anatomy positioned

correspondingly to the plurality of acceleration sensors with injury thereto, the

15   CPU being further programmed to output warning signals corresponding to the

output signals of the plurality of acceleration sensors;

a plurality of warning devices operatively connected to the CPU, the

plurality of warning devices providing warnings corresponding to the warning

signals output by the CPU.

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23.   The doll of claim 22, further comprising a simulated brain and nervous

system disposed within the head portion and the body, and a transparent skin

through which the simulated brain and the nervous system are visible.

25   24.   The doll of claim 22, further comprising:

first and second chambers disposed within the doll, at least a portion of the

first chamber being at least partially transparent and disposed to permit viewing of

the contents of the first chamber; and

the second chamber containing simulated blood and being in fluid

30   communication with the first chamber through one or more CPU-controlled

valves, the one or more CPU-controlled valves preventing the simulated blood

from passing from the second chamber to the first chamber absent a warning

signal output by the CPU to the one or more CPU-controlled valves.

25.   A doll, comprising:

a head portion floppably connected to a body; and

simulated blood that visibly appears in an area of the doll that has

experienced acceleration sufficient to cause internal bleeding to a corresponding

area of an infant's anatomy.

26.   The doll of claim 25, wherein the simulated blood comprises an electronic

display.

27.   The doll of claim 25, wherein the simulated blood comprises a liquid

crystal display.

28.   A doll, comprising:

head means floppably connected to body means; and

acceleration sensing means connected with the doll and triggering warning

means when the doll is subjected to treatment that could cause Shaken Baby

Syndrome in an infant subjected to said treatment.

29.   A method of learning about Shaken Baby Syndrome, the method

comprising:

shaking a doll, the doll comprising:

a head portion floppably connected to a body; and

an acceleration sensor connected with the doll and triggering a

warning indicative of Shaken Baby Syndrome when the doll is subjected

to treatment that could cause Shaken Baby Syndrome in an infant

subjected to said treatment; and

causing the acceleration sensor connected with the doll to trigger the

warning.

30.   The method of claim 29, further comprising the step of:

evaluating the warning to determine potential physiological effects of

corresponding shaking of an infant.

31. Performing the steps of the method of claim 29 in furtherance of a legal proceeding.

32. A doll, comprising:

a head portion floppably connected to a body;

a simulated brain at least partially encompassed by the head portion; and

an acceleration sensor connected with the doll and triggering a warning indicative of Shaken Baby Syndrome when the doll is subjected to treatment that could cause Shaken Baby Syndrome in an infant subjected to said treatment.

33. A doll, comprising:

a head portion floppably connected to a body such that the head portion is floppable about more than one axis; and

an acceleration sensor connected with the doll and triggering a warning indicative of Shaken Baby Syndrome when the doll is subjected to treatment that could cause Shaken Baby Syndrome in an infant subjected to said treatment.

34. The doll of claim 1, wherein the head portion is floppably connected to the body such that the head portion is floppable about more than one axis.
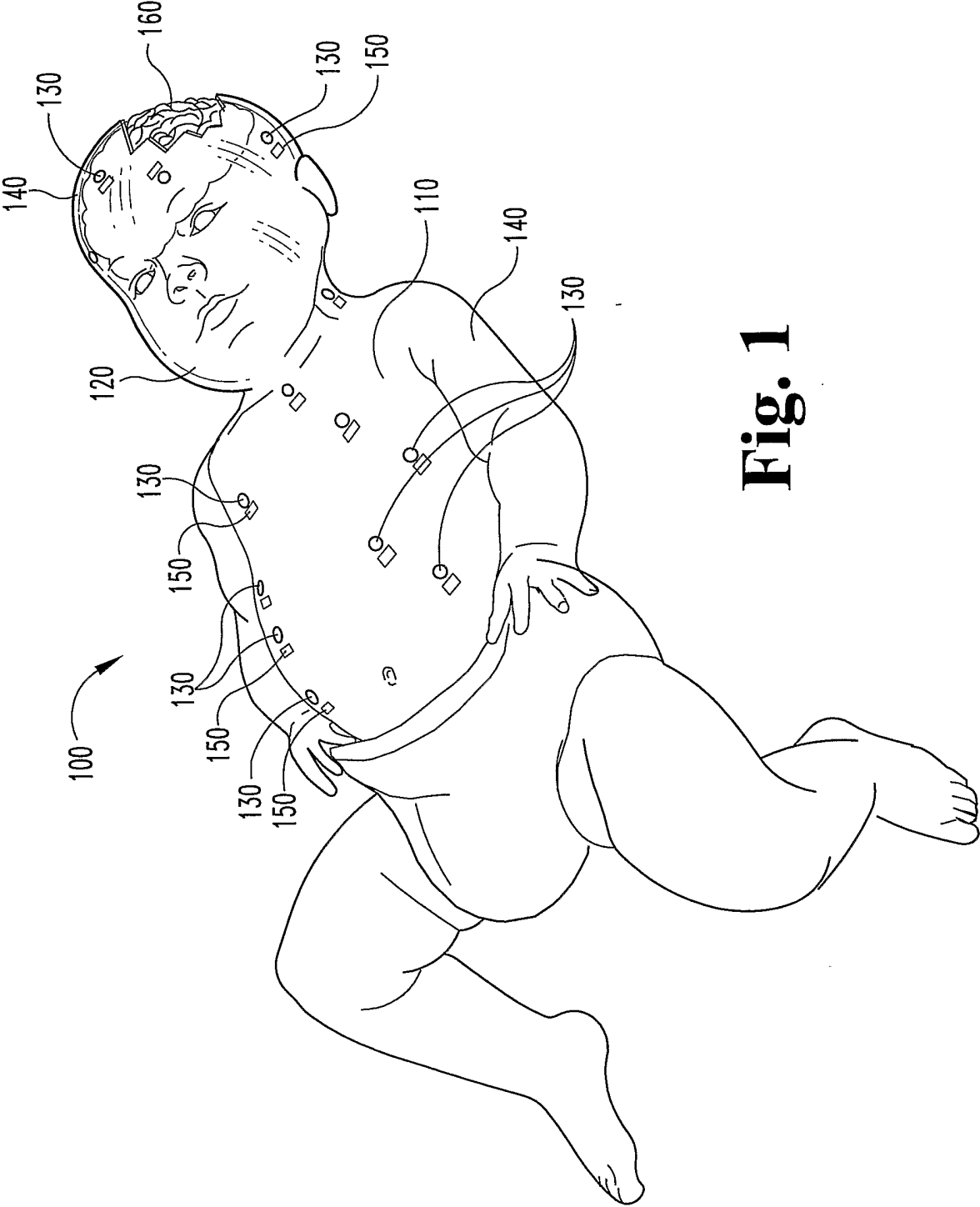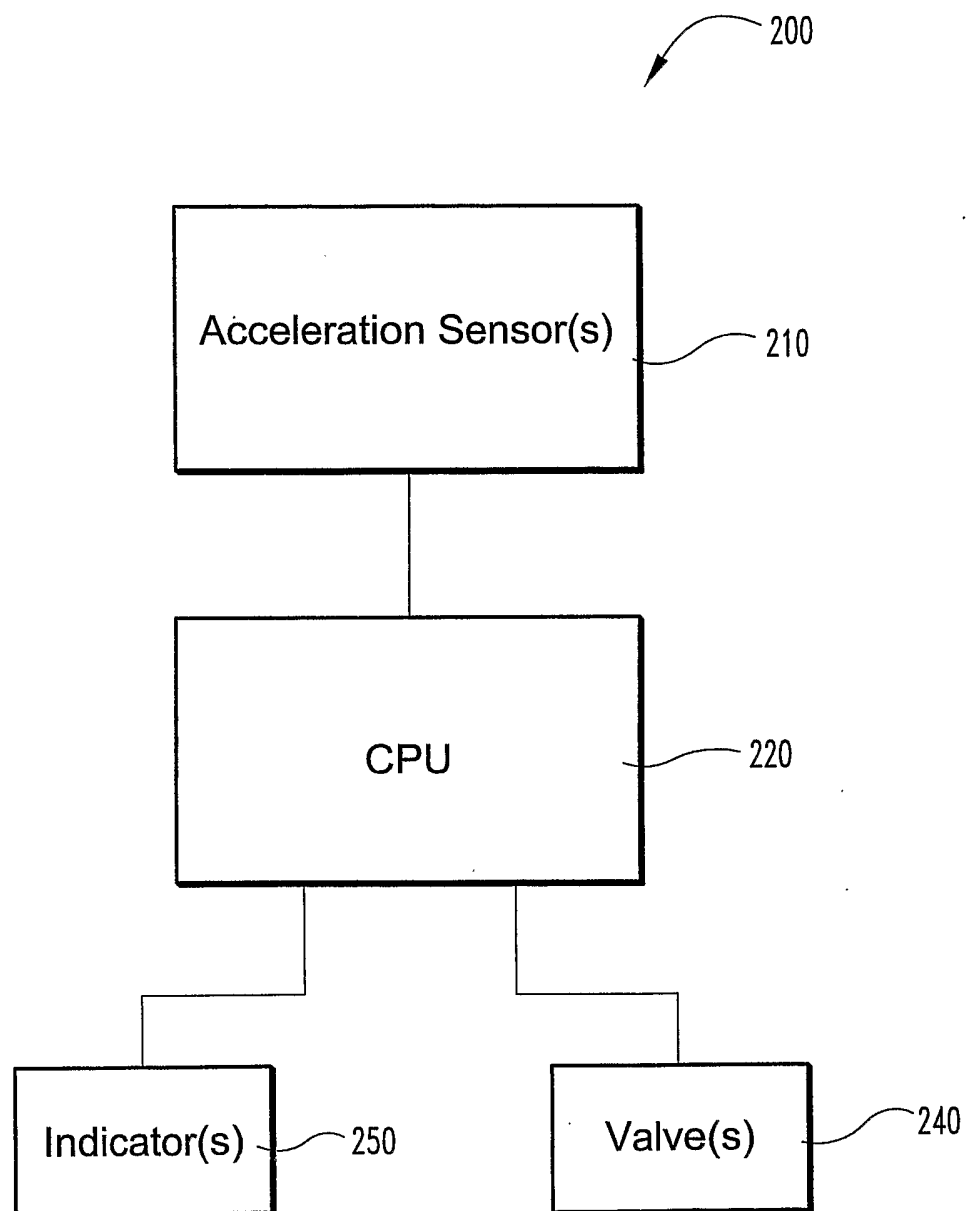
Fig. 1

Fig. 2

INTERNATIONAL SEARCH REPORT

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : G09B 19/00
US CL : 434/238

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)
  U.S. : 434/238,270

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US RE. 36,776 E (JURMAIN et al.) 11 July 2000 (11.07.2000), entire document	1-5,7,18,22,28-31
X,P	US 6,428,321 B1 (JURMAIN et al.) 06 August 2002 (06.08.2002), entire document	1-31
X --- Y	US 6,048,209 A (BAILEY) 11 April 2000 (11.04.2000), entire document	2-5,8-16,18-21,23,28-31 ----------- 1,6,17,22,24-27
Y	US 6,238,215 B1 (JURMAIN et al.) 29 May 2001 (29.05.2001), entire document	1-31
Y,P	US 6,428,323 B1 (PUGH) 06 August 2002 (06.08.2002), entire document	1-31

☐ Further documents are listed in the continuation of Box C. ☐ See patent family annex.

*	Special categories of cited documents:	"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
"A"	document defining the general state of the art which is not considered to be of particular relevance	"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
"E"	earlier application or patent 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)	"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
"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	"&"	document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
03 October 2002 (03.10.2002)	

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